

THE MAN FROM AGHARTI by JOHN & DOROTHY de COURCY

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AMAZING STORIES

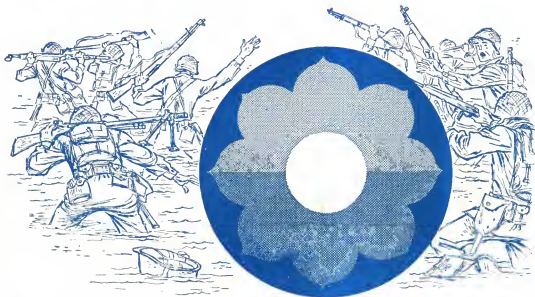
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Back cover painting by James B. Settles, depicting "Spoca Ship In The Jungle."

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The

# OBSERVATORY

..... by the Editor

**W**E are putting this issue out under a number of difficulties, so for those of our readers who discover certain minor irregularities in our pages, we request indulgence—with the promise that such things will be remedied in the future.

**T**HE feature story in this issue is based on the legend of the King of the World, in the underground city of Agharti, and is entirely fiction, but fiction we hope will prove to be very entertaining. The Snow-men mentioned in the story do have a basis in fact, since many people have seen their gigantic footprints in the mountain snow. We'd certainly hate to meet one, if he is anything like this!

**A.** K. JARVIS returns to the fold with "Mystery Of The Midgets", a very unusual novelette about a sideshow that will delight you and startle you as you read. We're of the opinion that now that Mr. Jarvis has begun to submit more of

his material, we'll find him on our contents pages more often, and with a great deal of top-flight fiction.

**T**HE second novelette featured on this month's contents page is by an old favorite also, William P. McGivern, whose recent mystery novel received the Red Badge award of \$1000. Congrats, Bill, and congrats also for this novelette. It's a fine piece of work, and we get only too few manuscripts from you these days.

**W**E also present a new author, and we break our "necks" to launch him, you might say, because we publish his first two stories in the same issue! They are, "That We May Rise Again" which is a story about ants, but what a story about ants! and the second is "Amoeba 'ROID" which ought to start you guessing right from the title! Well, two such varied stories could hardly be selected for one issue, and thus we think you'll feel as we did when we thus shattered that old bear, precedent!

**N**EXT new author to hit our pages is Irving Gerson, with a short-short on that old problem of the future and of time travel. This one's based on some very solid science and has a kick at the ending. You'll like it. It's titled "In All Probability."

**"THE Triumph of the Pig"** is Berkeley Livingston's effort for this month, and it is sure to please. Plenty of atmosphere and action of the right kind.

**O**NE of the most unusual "different" stories we've ever presented is Rog Phillips' "The Supernal Note". This one's about two people who meet in a plane, chat, and then part. That's all. But wait until you read it, and you'll find out that "that's all" can mean a lot!

**B**Y the way, we'd like it a lot if you readers who have followed such things, would send us any clippings (or personal observations) of the so-called "flying saucers", or anything that looks peculiar in the skies. You might help a great deal more than you imagine in solving the great mystery. Well, we'll knock off for this month and let you enjoy the stories. *Rap*



"Just leave it at the foot of the stairs—he'll come out and get it."

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# THE MAN FROM AGHARTI

by JOHN & DOROTHY  
de COURCY



**I**N A mountain pass high in the Himalayas, a solitary figure trudged through the powdery snow so bundled in furs as to appear to be only a shapeless blob. This was Tsering, a trader. On his back he carried something which many men would give all their possessions to obtain. They were manuscripts on the skins of animals, animals who had been extinct when history began.

Tsering struggled on wearily, almost hopelessly. He was not alone because he wanted to be. Five men had started

through the Nyel-wa-la with Tsering but when they had been three days on their journey, somehow they were caught in an avalanche. Only Tsering remained to finish the long trip.

He knew the mountain passes well but he was afraid to be alone where no man should be alone. Hope burned brighter within him with each step, hope that soon he would see a yak, or a fellow human or even just a footprint that would signify the end of his perilous journey. Soon he would reach a small village where he could rest.





**Under the mountains of Tibet lay a  
hidden city, home of the Lord of the World . . .**

Friends were to meet him there and they would go with him to Shigatse.

Tsering had no idea what the strange markings on the ancient skins meant. He knew not even from whence they had come. He only knew that they were more valuable than all the money in the world. The Dalai Lama had said so and so it must be the truth.

As Tsering thought of the avalanche and of his comrades forever entombed in the ice that never melts, he wondered why it had happened. It should not have been. This was not the time of year. From under his furs, he withdrew a small prayer wheel and paused as he prepared again his prayer that his comrades would find rest. With an easy motion of his wrist, he began spinning the wheel in rhythm with his steps. Monotonously he mumbled, also in rhythm. "Om — mani — padme — hum. Om—mani—padme—hum."

Suddenly the wrist stopped and the wheel spun a few times and stopped also. Tsering's downward cast eyes saw a shadow across his path. He stood rigid, slowly dying from the terrible fear that gripped him, not daring to raise his eyes else he see what the shadow indicated. Then, slowly he looked up, his muffled face peering upwards to see—what no man sees and lives. His lips trembled as he tried to form the words. Then they tumbled out.

"Mi-gö!" he screamed. "Mi-gö!"

The sound of Tsering's voice seemed to galvanize the hideous, pink creature into life, for in a lumbering rush it came at him and gathered him into its arms. Before Tsering could even think, this ghastly thing of hell had gripped him about the chest with its travesty of an arm, and with the other, tore Tsering's arm from its socket with a sickening crackle. Tsering screamed one terrible scream before his body

was torn in half at the waist.

Methodically, the monster ripped the body to bits and fragments. Then it lifted up the pack Tsering had carried and lumbered away. A few moments later, Mi-gö stood by a crevasse. It took Tsering's pack, crushed it and allowed the remains to fall into the gaping mouth in the ice. Then with nauseating gruntings that might have passed for laughter, it lumbered away.

**I**N A village a man sat in a small hut.

He was a white man, a chilling. Across the crude table from him sat another man with dark skin and oriental eyes. They were both bundled in furs and sitting silently.

The oriental finally spoke. "I fear for the men. They are much overdue."

His companion nodded. "It does look bad," he agreed. "I'll wait a little longer. Then I'll go and meet them—or . . ." He let the thought trail off.

"It's dangerous, Ira," the oriental replied. "I don't think you should go alone. Perhaps I might go some of the distance with you."

"No Liang," Ira said. "You have important work to do here. I can afford to take the chance but you can't. Besides, this is my job."

Liang nodded his head in resignation. "As you wish, my friend."

The two men rose and although they had spoken in Chinese, they reached across the table and shook hands in the western manner.

"I hope we shall meet again soon, Ira," Liang said, "for I shall worry after you until then."

"It will be soon," Ira promised.

Liang smiled and walked to the door of the hut. He turned and smiled again. "Take it easy, chum," he said incongruously and then closed the door.

Ira chuckled and sat down again.

He sat for nearly an hour hardly moving. Then he arose and fished under his heavy furs. He pulled out a dilapidated package of American cigarettes and counted the contents.

"Four," he muttered. "One a week. Well, this is the start of a new week."

He fished again and produced a match. Lighting the cigarette and inhaling luxuriously, he walked across the room. In the corner of the hut was a small, square pack. Ira slid it onto his shoulders and adjusted it for comfort. Satisfied at last, he glanced about the room and then left the hut.

Outside, one could see four more huts just like the one Ira had been in. They were apparently empty since the crude doors hung open. Indeed they were empty for a word had spread through the tiny village like a disease and the inhabitants had fled. And indeed it was a disease, fear, for the word that had been spoken was "Mi-gö."

Ira walked quite fast and soon the little village was lost from sight. In a few more minutes, he was an isolated bit of humanity, starting through the long, treacherous pass between Tibet and India. Before him lay a hundred miles of almost impassable territory so high in the air that one seemed to be breathing a vacuum. The wind ripped around corners at terrific speed. There would be times when he would have to walk on ledges of ice and one mis-step would send him plunging into almost bottomless ravines.

Beyond the pass lay hundreds of miles of wild territory held by bandits. In order to reach India, he would have to cross Nepal whose inhabitants disliked strangers and hated foreigners. Alone, Ira should stand no chance of ever emerging, yet he seemed strangely optimistic. Possibly this was because he had already done it four times.

Ira hummed as he walked, the half

smile on his face as always. However, an hour later, the smile vanished as he came upon the remains of Tsering scattered like bits of straw. Ira's lips compressed as he studied the footprints. The story was all too clear.

"Mi-gö," he muttered. The mutter carried with it no trace of fear. Ira felt only a hatred that only death could quench. He had no real reason to fear Mi-gö for although he had seen and had fought one of the abominations, he had come out battered but living. Of course, Ira had been lucky and he would be the first to admit it. If he ever met another, he might not emerge with his life. The next time he too might be scattered like pieces of a rag doll torn up by an angry child.

Ira didn't stop very long. He studied the ground, then stooped and picked up Tsering's prayer wheel. Squaring his shoulders, he began again to walk, spinning the wheel in cadence with his steps. And, out of place as it might seem, his lips formed the words, "Om—mani—padme—hum."

In spite of Mi-gö, the abominable snow men and death itself, Tsering's prayer was being finished.

THE youngish, academic looking man prowled through the stack of old magazines, pausing occasionally to glance furtively around. He finally found what he was looking for and half tucking it under his coat, sidled up to the desk where the proprietor of the used magazine store stood.

"I'll take this, if you please," he whispered.

"Amazing Stories, huh!" the proprietor boomed. He held the magazine at arm's length, looking at the semi-nude woman on the cover. A malicious grin appeared on his face and he jabbed the professorish man with his

elbow. "Pretty hot stuff, eh?"

The well-known crimson tide swept over the scholarly man who made vain attempts to hide his face from the other patrons. It seemed to take a tremendously long time for the proprietor to make change but at last the embarrassed man made his escape from the store accompanied by snickers and muted chuckles. He turned to close the door behind him and in so doing, the magazine fell to the street. Before the scholarly man could pick it up, a youth came abreast of him and scooped up the magazine.

"There you are, Professor Hall," the boy said.

"Err—er—awk—"

The boy had paused in mid-stride and was staring at the magazine. Tactfully, he let the subject drop before it began.

"Nice seeing you downtown, Professor," the boy smiled.

Walter Hall gave him a sick grin. "Yes—yes, Steven. Nice seeing you too." As he hurried away, Walter could have sworn the boy raised his eyebrows in a sort of youthful leer. Great waves of shame and mortification rolled over Walter as he hurried to his car. He was quite certain that he could read the mind of every casual stroller on the street. At last he reached his car and heaved himself inside.

"Ho my!" he breathed. "What a horrible experience!" He turned to the red-haired woman who was patiently putting her manicure set back in its case. "Those de Courcys!" he snarled.

"Couldn't you find the magazine, dear?" the woman asked.

"I found it all right but look at the thing! And to top it all off I met practically every member of the faculty and student body while I was in there! Why did I ever let them do it!"

"Let me see it," the woman inter-

rupted. She opened to the table of contents and ran her finger down the page. "'Some Are Not Men.' Is that the one?"

"Good heavens, yes! Wouldn't you expect them to choose a title like that?"

"Well—it's not too inaccurate dear. After all . . ."

"After all! After all! Quit making excuses for them! Why, they've made a laughing stock out of us. Surely they could have chosen a more sedate magazine. Look at that woman on the cover! Why—why—"

"Now, now, darling. It isn't a very plausible story, you know. This is about the only kind of magazine that would publish it."

"I'm disgraced!" Walter breathed. "Mary, what am I going to do?"

MARY laughed and turned to the story. "What's wrong with it. They didn't use our names and the picture doesn't look anything like us. It—it—looks more like the de Courcys."

"And I thought they were my friends!" Walter moaned. "Friends without an 'r', that's what they are!"

"Have you read it already? Is there something in it—"

"Of course I haven't read it," Walter bridled. "How could I? I just bought it!"

"Well then," Mary replied in a mollifying tone, "if you haven't read it how do you know it's so bad? It looks just about the way it did when you wrote it. Besides, let's see what Joe thinks of it before jumping to any conclusions."

Walter covered his mouth. "Suffering dinosaurs! I left him downtown. I said I'd pick you up and then come back after him."

"Where is he?"

"Oh he found an oriental restaurant

and walked to the unpretentious door-to eat."

"Well he'll be all right then. He's probably having the time of his life." "Perhaps," Walter replied starting the car. "We'd better hurry just the same."

They rode swiftly through traffic and a few minutes later, turned off onto a side street.

"Now let me see," Walter muttered. "I think it's that door over there."

"Don't be silly," Mary objected. "There's no sign on it."

"I know, I know," Walter said. "It's some sort of an exclusive affair. I'll go get him."

"I want to go too," Mary said quickly. "I'm curious."

Walter opened his mouth to object then shrugged his shoulders. They parked the car a short distance away and wanted to get something familiar way. Walter's knock was answered in a few seconds by a short, plump Chinese. He said something to Walter and he replied in the same tongue.

"What did you say?" Mary whispered.

"It's Cantonese. I'll explain later."

The oriental studied Walter for a moment then asked him in English: "You are friends of the Honored One, yes?"

"Ah—yes," Walter replied.

Grinning broadly, the little man drew the door open wide and bowed. "If you please."

Somewhat hesitantly, Walter and Mary entered. The Chinese turned and walked up a flight of stairs. At the top, he opened another door and bowing again, motioned for them to enter. As they stepped into a large room, many fragrant but alien scents struck their nostrils. The walls of the room were hung with heavy silk draperies and small lanterns and heavy copper bra-

ziers were everywhere. The only furniture in the room was four tables, one in each corner, and it was behind one of these that they found Joe. He sat on a cushion and clustered around him were several young men. Two of them wore business suits but the others wore long robes. The young men were listening intently as Joe spoke to them in a low monotone. He stopped presently and Walter cleared his throat. Joe looked up.

"Ah my children, you have returned," Joe smiled. He arose resplendent in a gold embroidered, red robe. He motioned for Walter and Mary to join him at the table.

"Ah—are—you sure we're not intruding?" Walter asked.

"Not at all!" Joe replied. "I've refrained from eating until you returned because I thought perhaps you would join me."

"Why we'd love to!" Mary burst forth cutting off Walter's customary objection.

THE men sitting around Joe got up one by one. Each stopped before Joe, clasped his hand and bowed low. Then they spoke a few words and departed.

"I—I—hope we aren't driving them away," Walter said.

"I think not," Joe answered smiling. "I don't doubt but that they welcome an excuse to be rid of me."

The plump, little man reappeared at that moment carrying in his arms yellow and blue bundles of silk. He bowed low before Walter and extended the yellow bundle. It unfolded into a beautiful robe possessing an enormous dragon. The little man smiled. "If you would honor me by accepting please?"

Walter arose and bowed low also. Then he accepted the robe gracefully with a simple, "Thank you."

The little man turned to Mary and unfolded a blue robe, slightly smaller than Walter's but equally exquisite. Mary started to protest but Walter shook his head. Mary looked at him for a moment then did as Walter had done, bowed low and accepted the robe.

The little man's grin broadened and bowing again, he waddled out of the room.

"Walter, we shouldn't!" Mary whispered. "These—these are priceless!"

"You have no choice, my dear," Joe explained. "My friend Wei would have been hurt had you refused."

Walter smiled and nodded his head in agreement.

"Oh this is all so confusing," Mary muttered.

"Perhaps so," Joe replied, "but you should feel honored, for Wei has given you the robe which makes you an equal to a man."

At this, Mary laughed and carefully put on her robe. "I guess I'll never learn about the Eastern way of doing things. Walter has told me about them time and time again but it's still alien to me."

A young boy in a white coat appeared and placed a huge bowl of flowers in the center of the table. In a moment he returned and set fragile egg shell cups before them. Mary looked at the almost colorless fluid then turned to Joe. "Joe," she began, "you said when we found the magazine you would tell the answers to our questions."

Walter scowled furiously.

Mary looked at him in puzzlement.

"Did I say something wrong?"

Joe laughed softly. "I think, my child, that Walter is sinking all too easily into the ritual of tea and the customs of the land where he has spent so many years."

Mary's eyebrows arched a little as

she looked again at Walter.

"You see," Joe continued, "every land has its customs, its mores if you prefer the term. In the East good manners prescribe that when the tea is brought, we merely exchange pleasantries and light conversation. When the bowls are taken away, we may then get to the serious business at hand. However, I will set you at rest, since your customs are different and I am by no means conventional. You can, as you say, shoot me the questions whenever you wish."

"Oh," was all Mary said. She was somewhat abashed and allowed Joe and Walter to exchange compliments, discuss music and other light topics. Occasionally she fidgeted but she maintained a discreet silence.

The tea bowls were taken away and many strange and exotic dishes occupied the table in their turn. Mary too began to share in the peaceful atmosphere. Finally they finished their last cup of tea and the bowls were removed for the last time.

"Ah, that was pleasant," Joe sighed. "I fear I am just a bit homesick."

"You aren't leaving us, are you?" Mary asked apprehensively.

"I'm afraid I must sometime, my dear. I have already stayed longer than I had intended."

There was silence for a while then Mary said, "We found the magazine this afternoon. Would you like to see it?"

"All in good time," Joe replied. "It is important that the story be published for there are many things that should be known. But then, perhaps we can discuss it a little later."

The thought of Joe's leaving made both Mary and Walter feel peculiar. It wasn't sadness exactly but a mixture of loneliness and emptiness. Joe had come to mean a lot to them. He had

become a member of the family and they hadn't thought about his going away. They sat in silence, not knowing what to say.

Joe smiled suddenly. "Don't be sad, my children. I shall answer all of your questions before I go and then you will understand why I must return."

Neither Walter nor Mary agreed with the last statement but Joe seemed disinclined to talk further. He got up from his cushion and almost immediately, the plump, little man appeared in a curtained doorway. He and Joe conversed for some time in the center of the room then, bowing again and seeming to smile more broadly than ever, the little man walked to the door leading out. Joe beckoned to Walter and Mary, then followed the little man.

The atmosphere had somehow been absorbed by the two for they took their leave of the plump Chinese and followed Joe down the stairs still clad in their luxurious robes. Walter didn't realize that he had it on until he was in the car and he began to grope around for his keys. He smiled to himself, slipped out of the car and took it off. Folding it carefully, he laid it over the back of the seat. Mary, who was lost in dreamy thought, paid no notice.

## CHAPTER II

WALTER started the car then glanced at his two companions. They seemed lost to the world so he decided not to disturb them. He drove slowly through town not wishing to lose the quiet feeling inside him. Somehow the atmosphere made the past months seem more credible. Memories began to crowd back on Walter as he drove toward the ferry terminal. He remembered that hot, July day when he had first seen Joe, stretched out

on the lawn, apparently asleep and dressed in his outlandish costume. He remembered how Joe had saved his life when a stone from the chimney of the house had fallen. Except for Joe's restraining hand, Walter would have been killed instantly. It was at that moment that the strange friendship was born.

At first, it had seemed bizarre to have this man, almost from another world, living with them, but gradually the strangeness had worn off. Joe had spoken of many wondrous things. He had told them he was from Tibet although he had never been more specific. They had asked him many questions but there were many he could not answer. Walter wondered if Joe really intended to tell them everything or whether he would disappear just as mysteriously as he had come.

At least Joe had been right about the manuscripts. Walter hadn't been too sure, at first, but Joe had told them about "the plumed serpent" and the history of the Mayas and he seemed to know what he was talking about. But when Joe told them about the "menace" and the "not men", it was a little hard to believe. Even after Joe had shown them the rings that were supposed to be from Lemuria, Walter had said no to the proposed expedition into Mexico to bring back the Mayan manuscripts. There had been too many angles to the trip he hadn't liked and besides, Mary hadn't wanted him to go.

Walter's face became grim as he recalled what happened after Joe left. The "things" that had kidnapped him certainly couldn't have been human. He wasn't the least bit sorry he had killed several of them in trying to escape and he shuddered at how close he had come to intercepting the leader who was trying to kill Mary. Perhaps he never would have been able to save

her if it hadn't been for Joe. The leader had pulled the switch on the fuse box before entering the house. Walter had been able to find him because of the ring he wore and they started grappling in the dark. The leader had been a much stronger man than Walter and he had just about killed Walter when the lights came on. Mary was then able to bash the intruder's head in with a vase and it turned out that Joe had turned on the lights. Again he had saved their lives. It was that night that Walter decided to go to Mexico and take Mary with him.

Walter's reminiscences were interrupted as the ferry purser came over to the window of the car. Absently Walter handed him a bill and pocketed the change. He pulled the car ahead onto the waiting ferry, set the brake and shut off the motor. He glanced at Mary and Joe. Both were asleep. Heaving a long sigh, Walter settled in his seat just as the ferry's horn sounded. The heavy engines shook the boat and the motion returned Walter to his dreamy thoughts.

He remembered how hard they had all worked in the days before they left for Mexico. There had been so much red tape to go through and they were delayed for almost a week. However, it had given Walter some free time to write his adventures. His friends, the de Courcys, thought they would make good story material although he secretly thought the story would never be published.

The trip by plane from California to Mexico City and from there to Tuxtla Gutierrez had been uneventful. Even after they had entered the "forbidden territory" it had been easy. None of the hardships and dangers they had expected to encounter were present and in spite of their fears, the

flesh eating insect, the talaje, failed to appear.

FINALLY they reached the plateau and immediately met a giant taper. At the sight of him, Walter had drawn his revolver but the animal showed no signs of unfriendliness. In fact, on succeeding days, the animal came to their camp and ate the scraps left for him. Mary had even ventured to pet the elephantine beast and he had responded by stroking her shoulders with his trunk-like nose.

During those days, Walter felt they must have been protected by angels for they experienced no hardships whatever. They located the cave early and had begun loosening a stone. They thrust crowbars under the stone but had lacked the strength to budge it. Walter had fastened heavy ropes to the crowbar and was preparing to construct a crude block and tackle when Mary appeared carrying their lunch, followed by the giant taper. During the discussion that ensued, Walter had protested violently and had tried to get Mary to shoo the taper away, but Mary insisted that she knew what she was doing. She took hold of the dangling rope and pulled on it. Then she rubbed the taper's nose and extended the rope to him.

The ponderous creature sniffed the rope then rubbed his huge face against Mary's shoulder again. Walter opened his mouth for an "I told you so" when the taper grasped the rope firmly in his trunk and backed off in earth-shaking steps. The rock moved slightly, then slid out of its position and shook the ground with a resounding boom. The others followed quickly now that the key stone had been removed. Soon there was an opening large enough for them to scramble through and food was forgotten in their haste to see what was



inside.

When he had finally gotten inside, Walter stood stunned for a moment. There they were, just as Joe said they would be, the manuscripts of Quetzalcoatl. The rolls of skins were neatly stacked on shelves which had obviously been hewn out of the rock by hand. Piled high around them were gold and silver objects, jade and carved crystal. When Walter had finally gotten his wits back again, he dashed from the cave to get the equipment and found the giant taper gleefully finishing the last remnants of their lunch. No one had cared though. This was what they had come for and neither Mary nor Walter could have equalled the joy in Joe's eyes.

The taper had helped them clear away the balance of the stones and the removal of the manuscripts was easy. The manuscripts themselves made a small pack and of the other objects, Walter and Joe had made a choice selection.

Walter smiled now as he recalled how sorrowful the taper had looked when they prepared to leave the plateau. Mary had been bent on taking him back but Joe and Walter had argued her out of that. It had taken them less time to make the trip back than they had planned. As soon as they had reached Tuxtla Gutierrez, however, they were met by an agent of the Mexican Government and told that the entire find was being claimed. Joe had smiled politely and had refused to hand their precious cargo, saying that he would get in touch with the government himself.

JOE'S call to Mexico City resulted in a delay. The government had sent word that they were sending an official who would make his country's position clear. The official hadn't looked much

like a Mexican. Joe had met him at the airfield and had taken him off to a restaurant where they talked for about two hours before bringing him to the hotel. Everything seemed to be settled when they arrived. Very carefully, the official divided the finds. All of the manuscripts he placed in one pile and all of the gold objects in another. The three pieces of jade he held in his hand for some time. Two were fist-sized plaques and the other was a large, beautifully executed shield, fourteen inches in diameter. Finally the official laid the two smaller pieces on the pile of golden objects and placed the large placque on the manuscripts. With a wave of his hand he indicated the pile of golden objects. "These are my government's," he had said simply, "and these are yours." Then he bowed low to Joe and scooping up the government's share, he departed.

It was as simple as that. When Walter had asked Joe how he had done it, Joe had merely smiled. It was just another question that Joe didn't answer.

Walter sighed. There were so many things he didn't understand. Joe had disposed of the jade shield for two hundred thousand dollars and had insisted that Walter and Mary keep it all. As for the manuscripts, that was something else. Walter was somewhat confused every time he thought of it: Joe wouldn't let him try to decipher them but had insisted that they go to Tibet immediately. Joe had wrapped each one carefully, placed them in a specially prepared box and mailed them himself. Walter had seen the address but that didn't help much. It had been addressed to an Admiral John Smith in New York.

Throughout all this time, Joe himself had remained an enigma. He had

promised that he would answer all their questions before he returned to Tibet. Later he had shortened it to when they had a copy of the magazine with their story in it. Now that they finally had a copy, Walter felt sure that Joe would be leaving soon.

Walter jerked into awareness as the ferry scraped into the slip. Automatically, he started the car and glanced again at Mary and Joe. They were still asleep or appeared so. He drove quite rapidly up the road toward home and a lurch of the car woke both Mary and Joe.

"Where are we, dear?" Mary asked sleepily.

"We're almost home," Walter replied.

They rounded a bend in the road and came in sight of the house. Walter nearly left the road when he saw a blaze of light.

"Who—— what——!" he gasped as they rolled up in front.

"It looks as though you have callers," Joe replied casually.

THEY climbed out of the car and Walter decided to sneak in through the back door but Joe strolled boldly up the front walk and up the steps. Shrugging, Walter and Mary fell in behind. Without hesitation, Joe flung the door open and walked in. A fire blazed cheerily in the fireplace and the air was warm. Stretched out in Walter's favorite chair with his feet on the hassock was a middle aged man of dark complexion. He inhaled luxuriously on his cigarette and stretched. Unhurriedly he reached beside him and picked up a foam flecked glass and drained its contents.

"Ahh——," the stranger remarked rising. "You folks are a little late. It was fortunate that your local store had some stout. I took the liberty of order-

ing some and I'd offer you a glass but I'm afraid I've drunk it all."

"Well I've never!" Mary breathed. Walter was speechless.

"Perhaps I should make the introductions," Joe said with some distaste. "My children, this is Ira Travers, the world's most unregenerate criminal.

"Ira, these are your uninvited hosts, Professor and Mrs. Walter Hall."

"Do come in," Ira offered cordially. "Have a chair." Then glancing at the magazine Walter had clutched in his hand, Ira nodded. "I admire your taste in literature, Professor. I had the pleasure of appearing in such pages myself."

Walter reddened to the roots of his hair.

"You know," Joe commented, "in a way the intrusion of this ill-mannered person is an advantage. He will be able to answer more of your questions than I can."

"At least I can keep this windbag from running off at the mouth too much," Ira replied.

Shocked, Walter and Mary stared at the two men. Joe's face remained perfectly serious but little by little, the twinkle in his eyes increased. Finally he broke into a chuckle. "It's good to see you again, Ira."

"Don't tell me you've missed me, you old goat!"

"Not exactly," Joe replied. "At least no more than one misses flies. It just gives one a touch of nostalgia to see one of the little insects.

"Ah—— ah—— do you know this man, Joe?" Walter asked.

Joe smiled. "It is my shame to admit that he is one of my best friends."

Ira extended his hand to Walter and the firmness of his grip made Walter wince. He turned to Mary and bowed slightly. "I am delighted to meet you, madam. In fact, the fame of your cof-

fee has spread half way around the world and I just can't wait to sample some."

Mary blushed furiously. "Oh don't be silly!" she giggled, and darted through the doorway.

The three men burst into laughter and sat back to wait for the inevitable coffee.

MARY paused in her reading. "That's the end," she said, "although the same little note is attached."

"Read it!" Ira demanded.

Mary picked up the magazine. "As I complete the writing of this narrative, Mary is making her last pot of coffee at home. Through the doorway, I can see Joe painstakingly sharpening a machette. In khakai, he looks very much the part of an explorer. Our supplies and equipment are packed. Our train leaves at ten thirty tonight."

"Hmmm," Ira commented. "Considering everything, it's not bad."

Mary sighed. "I don't see what you were complaining about, dear. I think it is very interesting."

Walter nodded his head judicially. "It's nothing like the way I wrote it. It rather makes me the hero, but all in all, it's quite good. A bit melodramatic perhaps."

"Oh, Walter! Don't be stuffy!" Mary snorted.

"It's certainly the same old windy Joe," Ira put in. "I rather like that half a page it takes to force an admission out of him. Sixty-four words it takes to say, 'yes, it is poison.'"

"It wasn't poison," Joe replied. "It was quite harmless. This creature was lying on the floor. He had tried to kill both Walter and Mary. If he were a man, the potion would have done him no harm. If on the other hand he was a 'not man', as soon as he went

down below the surface of the earth it would become a deadly poison. Actually I put the choice in his hands. You would have immediately emptied all your guns into his body or something equally crude and gruesome.

"Nevertheless, I think it's a good story," Ira said. "Considering what I have suffered at the hands of those de Courcys, I would say that all three of you got off lightly."

Joe laughed. "Are you implying, my friend, that there is any way in which your character may be defamed?"

"Perhaps not," Ira admitted, "but then, I don't go running around in stranger's gardens clad in a sort of fantastic costume either."

"That's true, but you DO go wandering around in their houses in business suits!"

Ira chuckled. "Touché!"

"Would anyone care for some more coffee?" Mary asked.

"They would," Ira replied.

Walter cleared his throat rather nervously. "Ah— perhaps I— ah— shouldn't mention this but— ah— Joe's remark about your being a criminal, Mr. Travers. I— ah— well— to put it bluntly, I heard of a man once who——"

"——who was a member of the British parliament, a member of the church hierarchy, a mail censor and a German spy, all at the same time." Ira finished.

"Well——not exactly——," Walter stammered.

"Who was a member of the Gestapo, wanted for murder in France and Italy, a Buddhist monk, wanted for embezzlement and armed robbery in four other countries and was a General in the Army of the United States, all at the same time," Ira added.

Walter gasped. "You—you——"

"I confess." Ira hung his head in mock regret. "I throw myself on the mercy of the court."

"I don't understand this at all!" Mary said bluntly. "What's he talking about?"

Joe smiled. "The explanation, my dear children, is quite simple. At an early age, Ira became convinced that he was the logical successor to Robin Hood. He has journeyed about the world for many years setting wrongs to right, protecting the weak, robbing the rich and giving to the poor, and indulging in other such theatrics which have earned him the title of the world's greatest ham."

"Then—then—it's the same man," Walter asked, dumbfounded. "He's—the same one I've read about?"

JOE nodded. "The more interesting parts of his life haven't ever been revealed, but he's the same man all right."

Ira smiled broadly. "Shall I take a bow?"

Walter blushed. "I'm sorry I was so nosey."

"Quite all right," Ira said, waving his hand. "You're not nearly as nosey as the average policeman."

"Have you really killed as many people as they say you have?" Mary asked.

"Probably many more," Ira replied. "But then, your husband is rapidly catching up with me. Let's see, how many does he have to his credit now? Two or three? Just two, I guess. We really should give Joe the credit for the last one."

"As I said before, I didn't kill him," Joe insisted.

"That is drawing a pretty fine line, my friend," Ira answered.

"Please!" Mary protested. "I'm sorry I brought the subject up. Let's

don't talk about it anymore!"

"Good idea!" Walter agreed. "I wish the story had never been published!"

Joe frowned. "In spite of your feelings, my son, I think the story will do a great deal of good. At least, it should make a few conscious of the menace that hangs over them."

"Do you actually think that anyone would believe the facts of the story?" Walter asked.

"There are always those who will scoff at anything," Joe replied. "And there are those who will smile and say, 'a nice story.' But there still remains those few who will read and understand. These are the people who think, who probe and who want to find out things. It is these people we want to help."

"But what about the others?" Mary asked.

"My dear, the world is full of people who don't want to be helped and others who don't think they need any help. I'm afraid there is little anyone can do for them. They either don't want to see or they refuse to see and changing them, I fear, is a very difficult task."

The room became silent. The ticking of the mantle clock seemed abnormally loud. Ira lit a cigarette and inhaled deeply. Walter gazed intently into the fire, his unlit pipe clenched in his teeth. Mary let her mending fall in her lap as she looked at Joe, wondering. A little frown appeared on her brow as she studied his face.

"Joe," Mary said softly. "Where did you come from?"

Joe sighed. "That's a long story, my child, but one I know you have wanted to hear. Perhaps—you would like to tell it, Ira."

"No, I'm rather tired of talking. You go ahead."

"As you wish," Joe replied softly.

"Just a second," Mary interrupted. "I have some more coffee going. I'll bring it in."

Mary dashed from the room, reappearing a moment later with a steaming pot of coffee which she set on the table.

"Well," Joe said meditatively, "I think I should start with Tibet."

"No!" Ira contradicted. "Start at the beginning."

"But really," Joe protested. "Personalities aren't truly important."

"Walter and Mary want to know where you came from! They're not the least bit interested in one of your long winded discussions on Tibet!"

"All right," Joe agreed wearily. "Well, it all really began when I was thirty years of age at the—"

"The beginning!" Ira insisted.

"The beginning," Joe said, resignedly.

**I**N 1797," Joe began in a quiet voice," a child was born in Basra to very poor parents. During the year that followed, his parents died so the child was sent to an aging uncle. This child's name was Muhammed Jolah. He fared well at the hands of this uncle and learned much as the uncle was a trader and traveled to many lands. One day, during the child's fourteenth year, the uncle's caravan was attacked by Turanian bandits and none but the child escaped alive. Muhammed Jolah was taken as a captive across Persia and sold as a slave to a rich man in Kabul.

"The lad who had learned so much of other lands and people did not labor long in the fields of the rich man but was soon brought to his house and made an assistant to the teacher of the rich man's sons. This teacher had been a Buddhist monk and he took a liking to the lad. In their spare time, he

would tell Muhammed Jolah about the many mysteries of the universe.

"Muhammed's life was peaceful and not too unbearable. Gradually he grew in knowledge and became a valued possession of the rich man. Yet always Muhammed nourished within his heart the hope that someday he would be a free man. In his twenty-third year, the opportunity came. The youngest son of the rich man, and indeed the apple of his eye, fell from his horse and was dragged underneath by the frightened animal. It was Muhammed Jolah who ran forward and grabbed the animal about the forelegs thus saving the young son's life.

"Muhammed was not badly injured but his cuts and bruises were enough to make the rich man appreciate the sacrifice. Correspondingly, Muhammed was given one hundred pieces of gold and his freedom. Immediately the young man set out to see what to him was the whole world. He traveled far, covering much of India, Burma and part of China, eventually arriving at the ancient city of Peiping, penniless.

"Muhammed Jolah lacked wisdom in one thing more than in others and that was in the knowledge of how to live. He wandered through the streets of Peiping, hungry and clad only in what rags he could not see until he came upon what he thought to be a holy man. This man sat cross-legged in the Padmasaa, paying no notice to the occasional coins that were flung at his feet. His eyes were half closed, his hair matted and his body most unclean. Muhammed watched him all day, wondering who and what this man might be.

"The next day in another part of town, Muhammed Jolah sat, girded with a dirty cloth, his long hair uncombed, his legs crossed and mumbling words from the holy books. In this

fashion did Muhammed exist, moving from town to town. In all fairness, we cannot say that Muhammed was a hypocrite for each night he thought, meditated and studied what few writings his meager income allowed him to possess. Little by little in him was formed the desire to be truly a holy man.

"Thus, in his thirtieth year, Muhammed Jolah reached a tiny hamlet at the base of the Himalayas and prepared to cross the mountains in search of the living Buddha. To the few natives, he tossed the contents of his purse and having only a bit of food in his pouch, a staff and a fur cloak, he began on foot to cross the formidable mountains, hoping that he would in some way be guided to the place he sought. His youth, and stamina, and determination carried him for eleven terrible days but at last his strength failed and he fell to die in the snow that never melts."

**B**UT Muhammed Jolah did not die, for by chance or perhaps by something higher than man, a lama from a nearby lamasery came upon the nearly dead Muhammed. He was brought to the lamasery and when he was strong enough, began to learn in earnest what they could teach him. It wasn't long before he became wise indeed and could, by modern standards, work miracles.

"But this was not enough, for although Muhammed Jolah was now truly a holy man, a yellow hat lama, he wished to seek and learn more. Once again he discarded his belongings and set out on foot to find not the living Buddha but the fabulous Shambal-la, the underground city wherein dwelt the King of the World. He walked by day and slept by night. No longer was he troubled by cold and hunger for now

he possessed many of the secrets of nature. At length he felt he was drawing near to what he sought and he stopped, sending out his thought, hoping that someone in the famous city would receive his message and guide him. He continued thus in deep meditation until the fall of night. It was during this night that his meditations were interrupted by a strange man who stumbled toward him and fell in the snow.

"Muhammed knelt by the stranger and allowed the living warmth from his hands to revive the fallen man. Although weak and exhausted and nearly out of his head, he was still able to tell Muhammed where to take him. Carrying him over his shoulder, Muhammed walked and came to a cave in the side of a mountain. Within the cave, he followed a descending passage which emerged into a gigantic cavern many miles across and more than two miles in height. In the center were great and beautiful buildings, gleaming in such a way as to appear to be made of gold and precious stone. Muhammed gasped in wonderment. Truly this was what he had sought.

"Hardly knowing what he was doing, Muhammed ran in the direction of the buildings. As he neared the city, he saw someone running to meet him and tried hurrying still more. After what seemed like hours to Muhammed, he reached the edge of the city and lay his unconscious burden down, as the man he had seen in the distance approached. They spoke a few words to one another but it soon became clear that they did not speak the same language. Even so, the two men became friends at sight and together they carried the unconscious man into the city.

"In a short time, Muhammed learned that only five men comprised

the population of the city. These five men had come on an expedition and they were almost the first Europeans to enter Tibet. They had found the cave quite by accident in a storm and had lived there for many months. This couldn't be the wonderful city of Agharti, Muhammed thought, but his eyes told him otherwise. Then suddenly he came to the realization that this had once been the fabulous Shambal-la and for some reason it had been deserted.

"The five men who had stumbled into the city had found great stores of food and water and these men had been content to remain rather than brave the terrible mountains again. None of the many writings in the huge library were readable to these men and so it came about that Muhammed Jolah who had come to learn, began to teach. He found that the library contained the secrets of an unknown science from where they knew not. Gradually the small group learned how to operate the machines in the city, how to repair and care for them and how to build new things.

"There were wondrous machines in this city which supplied one's every want. They manufactured food and clothing and provided light and heat. Little by little, the city came to life again. Others came, some by chance, some came seeking they knew not what, and others merely became lost and were brought to safety. Always they watched that no one should suffer privation and perish nearby. Slowly the city grew and gradually the great library was read and translated. Of those that came to the city, none desired to leave. The five white men and Muhammed Jolah were considered the leaders of the city although no one was required to do other than obey his best judgment.

"IT WAS in the year 1853 that the first of what we have since discovered are 'not men' came to Agharti. Very nearly did he cause a civil war through his machinations and only after lives had been lost did the inhabitants realize the existence of a menace. What this menace could be, no one knew but from that time forward the inhabitants dedicated themselves to fighting this menace and for the first time they ventured into the world without. Without knowing, the inhabitants found themselves banded together with common purposes, to learn, to help humanity and to plumb the secrets of the universe. There have been many additions since those early days which has resulted in the combining and comparing of the knowledge of many civilizations and cultures.

"It was in the year 1895 that Muhammed Jolah suddenly realized that he was 98 years old. It was then too that he realized that none of the inhabitants had died except those who had been killed during the trouble. It took some time to discover the cause of this remarkable preservation but eventually it was found in the thin shield of metal that surrounds the city. Always it had been thought that this was a supporting shell but some hasty calculations showed the rocks were more than sufficiently strong to sustain themselves. Moreover, the shield was quite soft and made of a metal that to this day defies analysis.

"Now that the inhabitants of the city knew that man was not intended to die in a few short years, they set out in earnest to learn why a great and brooding evil hung over the earth and why it had destroyed civilizations and men since time began. A short time ago, some new knowledge was uncovered that led some of the inhabitants to believe that the manuscripts of

Quezalcoatl would contain information that would help in combating the evil influence of this menace. Although Shambal-la is safe, the rest of the world is not and it was the greatest desire of all the inhabitants to find some means of helping the rest of the world. Already they had information which showed that the menace was about to plunge the whole world into another bloody war in the hope of again destroying all civilization. Agharti's job has always been combating evil wherever and whenever found.

"There are those in the world who thirst after knowledge and whose only thought is helping those less fortunate than they. Such was the case of the impetuous Ira Travers. In the early nineteen hundreds after the first world war, he tried to cross the Himalayas in search of knowledge and when he fell in the snow to die, he was picked up and brought to Agharti. He has since proven to be one of Agharti's most zealous citizens and it is indeed an honor to consider him my friend.

"Today, Agharti stands as the center of all learning and the only bulwark between mankind and the menace. That is why I came to get the manuscripts so that we might find some conceivable way of protecting the world against this otherwise inevitable war. Maybe this time, wars will end and fighting will cease, and we will be able to make the rest of the world as beautiful and as wonderful as our Agharti."

THERE was a heavy silence. Walter and Mary sat spellbound as though they had been in another world. To them, the tale was like something out of the Arabian Nights.

At last Mary stirred. "But—but—you, Joe. Where—how—?"

"He's a little self conscious about his age," Ira murmured.

"Oh," Mary said in a small voice. "But—but—that's impossible!" Walter exploded. "Joe! Muhammed Jolah? Why—why—that would make him almost a hundred and fifty years old!"

Joe only stared at the floor just as he had done while telling the story.

"That's probably why he can't get any life insurance," Ira replied.

Walter looked back on all the incredible things that had happened to him since meeting Joe and suddenly, his age became very believable. "Think of that," he murmured. "So that's the explanation of the legend of Agharti."

"Not quite, my son. The legend of Agharti or Shambal-la is many thousands of years old. We are merely usurpers. Our city is called Agharti because we believe it was once the genuine city of legend. We have done our best to carry on the traditions of that city and maybe someday we shall be able to spread our city all over the earth."

Ira Travers lit another cigarette. "Joe," he said softly. "I don't know how to say this but—you see, the manuscripts never reached Agharti."

The look that passed between Joe and Ira was heart-rending. Great lines of age seemed to appear on Joe's face.

"Mi-gö?" Ira whispered.

Joe sighed. "I see."

"Mi-gö?" Walter said in a questioning tone.

"The abominable snowmen," Ira explained.

"You mean they're real?" Walter gasped.

Ira's voice was flat. "Yes, they're real."

Walter stared silently at the floor. Within him raged a battle. Once he straightened, then he sighed and stared at the floor again. At last, he came to a decision.



"Joe," he began timidly.

"Yes, my son."

"Do you remember the day we got home? You insisted that the manuscripts be packed at once."

"Yes?"

"Do you remember Mary asked you to help bring some things from the store?"

A slight smile appeared on Ira's face as Joe answered, "I remember."

"Well—I—you see—I'm an archaeologist and I—I—just couldn't bring myself to send them all away without——" Walter hesitated and drew a long breath. "I brought out the characters on each of the manuscripts with ultra violet and microfilmed the whole works."

Slowly, Joe straightened in his chair, the lines fading as a smile appeared. He looked long at Walter and then said, "Bless you, son, for being an archaeologist."

THE dim red glow of the safe light made weird contrasts on the faces of the four in the dark room. Lips appeared palid and eyes abnormally dark. They were not watching each other however, but were intent on Walter and Ira who were winding a thin strip of film on the spool of the developing tank. When they were finished, Walter replaced the top on the light proof tank while Ira carefully poured developer out of a stock bottle into a graduate. All eyes were riveted on Ira's hands as he squeezed the pinch cock on a rubber tube, allowing distilled water to run slowly into the graduate.

"I don't know why I'm taking such pains with this," Ira chuckled. "A half-hearted guess would probably yield the same results."

Walter laughed. "I know just how you feel."

"What's the developing time on this?" Ira asked.

Walter glanced at the label on the bottle. "Let's see. This is about five months old but it's been sealed. I think five minutes ought to do it."

With a steady hand, Ira poured the contents of the graduate into the developing tank and Walter started the timer. They watched in silence.

"Nice weather," Ira finally said in a conversational tone.

All eyes turned from the timer to Ira's face. Someone snickered and then they turned back to the timer.

Ira waited a few more seconds, then said, "I've got a dollar that says there's nothing on it."

Walter glared at him. "Don't you think I know how to expose a piece of film?"

For an answer, Ira took a dollar bill out of his pocket. "Put up or shut up," he said, grinning.

Walter smiled as he took out a dollar bill. "You know, in spite of myself I'm beginning to like you, Mr. Travers."

"Most people do—just before I take their money."

"I'm not worried," Walter replied. "I've got a sure thing here."

"That's what Napoleon thought at Waterloo."

Mary fidgeted. "What makes you think anything is wrong?"

"It's just a feeling I have," Ira answered.

"Knowing this person as I do," Joe remarked, "I think he is capable of deliberate sabotage just to earn a dollar."

"I wish you wouldn't say things like that," Walter sighed. "I'm beginning to worry."

The timer buzzed.

"Looks like your worries are over," Ira said.

Walter flicked on the overhead light. "I don't know why I had that off. The developing tank is lightproof."

Ira reached over and flicked the light off again. "If you don't mind indulging in an old man's whims, I'd like to take a look at that film before we wash and fix it."

"Won't it hurt the film Walter?" Mary asked anxiously.

Walter shook his head. "No. We're just going to glance at it."

Ira removed the top of the tank and drew out the spool. Carefully he unwound a foot of film and held it before the safe light. It was quite transparent and totally blank.

"Why—why—what happened?" Walter gasped.

Joe sighed wearily. "Ira there are times when I wish you wouldn't have these hunches."

"Oh Walter!" Mary said, almost moaning. "Isn't there something you can do? Maybe this is the wrong film."

"Oh its the right one all right," Walter replied. "I don't know what could have happened!"

Ira smiled. "To use a hackneyed phrase, all may not be lost." He clamped the lid back on the tank and stuck the spout under the running water.

"Do you know what's wrong?" Walter asked.

"No. But I'm going to find out." He flicked the lights on and opened the door. He motioned to Joe and Mary. "You two run along. We may be in here for some time."

Obediently, the two left the little room.

WHEN the door had closed, Ira said, "now for that developer." He poured a small quantity onto an evaporating dish and selecting a piece of red and another of blue litmus

paper, he dunked them in the developer. The blue litmus turned a bright pink.

"Well, well," Ira commented. "This is certainly a new kind of acid developer."

"But — but that's impossible!" Walter picked up the bottle of developer and scrutinized the label. "This is developer, all right and it's a fresh bottle. I broke the seal myself."

"I'm becoming more suspicious of nicely sealed bottles every day," Ira replied. "Now that we know it isn't developer, suppose we find out what it is."

Walter shrugged. "I don't know what good it will do."

"I don't know either but I'm an incurable optimist," Ira smiled.

He picked up a test tube rack and set a row of clean tubes in the holes. Then he poured a small amount of the developer into each tube. Into the first tube, he dropped some barium chloride. Into the second, a few drops of silver nitrate. A curdy precipitate formed almost immediately in the second tube.

"Well, well, well," Ira muttered. "They haven't much imagination, have they?"

"Who hasn't!" Walter demanded.

"Whoever filled up that developer bottle with hydrochloric acid. I rather imagine they just used that normal solution from the shelf here. We'll titrate it and see."

Ira carefully let an occasional drop of normal sodium hydroxide fall into a measured quantity of developer. He swirled the mixture constantly. At last, he uttered a grunt of satisfaction as a faint pink coloration appeared in the beaker in his hand. He glanced at the graduations on the burette. "How long ago did you buy this sodium hydroxide solution?"

"Just a week ago," Walter replied.

"The date is on the label."

Ira nodded. "Was it a reliable outfit?"

"Definitely."

Ira began scribbling on a pad. He covered one page with figures then began on a second. Finally he straightened and dropped his pencil.

"What are you going to do?" Walter asked bewildered.

Ira lit a cigarette. "I'm going to rinse the film in very dilute sodium hydroxide for just long enough to bring the film to a close pH7."

Walter snorted. "What good will that do?"

Ira laughed. "Live and learn, chum. I admit though that it'll probably do no good at all."

In a few minutes, Ira turned out the light, opened the tank and poured in a mixture he had prepared. It seemed that little more than an instant had gone by before he dumped it out and poured several changes of clear water over the film. Again he put the cover on and placed the tank under the running tap.

Walter waited in silence for a while, then cleared his throat. "I don't see how you can restore the image. Most of the gelatine will have been washed off by now."

"That's just what I think our friends thought would happen," Ira replied. "If we're lucky, the acid will have hardened the gelatine just enough to preserve the undeveloped emulsion."

"But what about the silver bromide? That'll all be silver chloride now."

"That's a good point," Ira admitted. "Have you got any liquid bromine?"

"I don't know," Walter replied. "There might be some in this cupboard." He opened a door and began rummaging through his spare equipment. "Ah, here it is."

"Fine!" Ira exclaimed. "I'll be see-

ing you. Join your wife and Joe. I'm going to try to gas myself to death."

**B**EFORE he could protest, Ira ushered Walter out the door. He turned the key in the lock then went back to the bench. He filed a knick in the bromine ampule, broke it open and poured the contents into a glass tray. Immediately he grabbed the film and passed it back and forth over the ugly red liquid. The fumes assailed his nostrils and he began to cough. Seconds passed, each one unbearable and seemingly endless as Ira gasped and choked in the small dark room. The ventilating fans seemed to be merely making noise as the fumes grew denser.

Finally, coughing violently, Ira backed away from the bromine and rewound the bit of film on the spool. He held his breath the last few seconds, clapped the spool into the developing tank and fumbled the cover into place. He practically dropped the tank under the running water, dashed the bromine into the sink, rushed to the door, struggled with the lock then burst into the hallway, slamming the door behind him.

He stood there for a moment coughing so hard that tears rolled down his face. The others clustered around him anxiously, until at last, the coughing stopped.

"What's the matter?" Mary exclaimed, her face a mask of concern.

"I don't use Lifeboy," Ira wheezed.

Mary's face relaxed into a grin and Joe chuckled dryly.

Walter looked grave. "You're liable to hurt your lungs, doing that. That stuff is pretty powerful."

"Oh—I'm—conditioned to it," Ira gasped. "I've had to smell Joe's incense for years."

"It's not half so mal-odorous as that beverage you're addicted to," Joe re-

plied.

Ira lit a cigarette and strangled on the smoke. "That's—the—thanks—I get for my sacrifice."

"I only hope we get something after all this!" Walter exclaimed.

"I'll probably get something," Ira wheezed. "Pneumonia!" He turned to the door of the dark room and opened it a crack. The smell was strong but not too overpowering so he flung the door open. "Come on in, Walter. I'm not going to try anything else like that."

Walter entered and closed the door. "Bromos. Greek for stench," he said.

"Again the Greeks have a word for it," Ira laughed.

"Well, what do we do now?" Walter asked.

"Now we expose the film for a few seconds to light, polarized to forty five degrees."

Walter stared at Ira blankly.

"You'll see," Ira murmured. "Have you got any polarized filters?"

"They're not photographic," Walter replied.

"That's all right."

Walter opened a cupboard and brought down a walnut box. He opened it and handed two filter holders to Ira. Ira fitted the two disks of glass together and lined up the markings on the rim. Then he pulled out his pen light.

"Now comes the big trick. You stretch the film out on the table, emulsion side up and I'll do the rest."

Once again Ira snapped off the overhead light and opened the developing tank. Walter spread the film out as directed, holding it with his thumbs. Ira held the two polaroid filters with the arrow at forty five degrees to the film and poised his pen light over the filters.

"Steady now," he breathed. The pen

light came on and Ira carefully moved the light and the filters the length of the film, never once allowing the circle of light to escape around the edges. "There, that does it," he said finally. "Now, you can go ahead and develop it. First of all, let's have a look at the developer."

Walter rewound the film on the spool and closed the tank. Then, snapping on the light, he fished in the supply cupboard for a bottle of developer. Ira poured a little of it in his hand and rubbed. Then he smelled it.

"It's not hair tonic," Ira said as he handed the bottle to Walter. He walked to the door. "Have fun." He grinned and stepped outside.

"**WOULD** you care for more coffee?" Mary asked.

Joe shook his head, still lost in thought.

"I don't believe I will either," Ira said. "Everything tastes like bromine."

"Poor man," Mary sympathized, "and after coming so far just to drink my coffee too."

"Well—it was my major reason for coming all right, but there were certain other considerations," Ira smiled.

Joe looked at Ira intently. "What precisely were you trying to do? Was it of sufficient importance to justify this unpleasant smell?"

Ira sniffed. "I don't smell anything."

"That is quite understandable inasmuch as the smell is originating with you."

"Well, I didn't have time to change my sox this morning," Ira replied, "and you know how laundry service is these days."

"Oh heavens!" Mary interrupted.

"Would it be too much trouble, Mr. Travers, to answer my question?" Joe asked.

"Don't tell me that hidden away in

that speech concerning my lack of daintiness there is a question!"

"I was just mildly curious to know what you might have been doing in that dark room."

"Well," Ira said thoughtfully, "I might have been painting a flagpole, but I wasn't. Then on the other hand, I could have been composing sea shanties for the Swiss navy. Then again, in the time I had——"

"Please! Enough of this childishness!"

"Very well. Since you put it that way, I'll have to admit that I don't know what I was doing. I have some high hopes that I might have reproduced an image on the film but since no one really knows what causes photographic effects, I'll come right out and confess that I don't know either."

"Perhaps you would be so kind as to tell me what you did, then?" Joe said mildly.

"Well, I began by neutralizing the film."

"Neutralizing it from what, may I ask?"

"In place of developer, the bottle contained hydrochloric acid. Apparently, the idea was to make sure that film wasn't developed."

"Whose idea?" Joe demanded.

"Why do you ask me all of these technical questions?" Ira smiled. "After all I'm just an ordinary gangster. You're supposed to be the crystal gazer, mystic and tin-horn prophet around here."

Mary's eyebrows formed an inverted V as she watched the bickering. "Could it——could it——have been one of those——those——'not men'?"

"Undoubtedly," Ira replied, "but Joe wants me to pin it down to which one, when he was here, and whether or not he knew what was on the film. He's laboring under the delusion that

I have a familiar spirit or something, that tells me these things."

Joe sighed. "I suppose it was a pointless question."

They all turned as the door of the darkroom opened and Walter came into the living room, dangling the dripping strip of film. "There's something on it," he said to the unasked question. "It's not too clear, though."

"I had sort of a hunch it wouldn't exactly put Hollywood to shame," Ira said rising, "but I had hoped it would be readable."

"I think it is. I glanced at it with a pocket magnifier and I made out most of the characters. Of course, you can see here——"

"Persistent meddlers, aren't you!" a heavy voice boomed.

IRA, who had been walking toward Walter stopped dead. Joe turned in his chair and Mary stood, white faced and trembling, her mouth forming a little O. The curtains across the dining room entrance were thrust aside and a burly figure stepped into the room.

"I—think this is where I came in," Walter mumbled.

Ira looked at him sharply. "Don't move," he whispered.

The intruder whipped a revolver out from under his coat and cocked it deliberately. He hesitated a moment, giving those in the room a chance to size him up. He was over six feet in height and in general, a big man. His face was covered by a black mask and he was wearing a dark, frayed overcoat. The hat, pulled low over his eyes, was battered and weather worn.

"What's the matter? You all turned yellow?" the figure asked.

"No," Ira replied. "We've decided to punish you for this intrusion by putting you in Coventry. Your manners are really atrocious."

"Look who talks about manners," Mary said in a quivering voice.

"Shut up!" the intruder barked.

After a short pause, Ira remarked, "Say, how would you like to make some easy money?"

The man said nothing.

"I'll bet you a hundred dollars," Ira continued, "that I can draw my gun and shoot you right between the eyes before you can pull the trigger on that toy of yours."

The big figure emitted a snort. Ira opened his coat and casually put his left hand inside. Everyone in the room jumped when Ira's gun fired. The intruder didn't stir. For one long moment he stood, gun poised and unmoving, then abruptly he vanished into thin air. Where he had stood, fragments of plaster were scattered about the floor and a dime sized hole was in the wall about six feet from the floor.

"Now I wonder what that was all about," Ira mumbled. "I thought I was being clever. He wouldn't have been the first guy to expect me to pull out my wallet." He scratched his head. "I'd STILL like to know what's going on!"

Just then, Mary sank down weakly on a cushion and began to sob. Joe patted her on the shoulder. "It's all right, Mary my child. No one is hurt."

"It's — it's — gone!" Walter exclaimed hoarsely.

Mary lifted her head. "What's gone?"

"The film!" Walter said, almost frantically. He got down on his knees and began a frantic search.

"So that's it!" Ira exploded. "While we were all watching, they took the film."

"I can't find it!" Walter said rising. "Where did it go?"

"There's no point in searching, my son," Joe said quietly. "We have been tricked. The figure was an illusion.

Someone must have stepped into the room behind you and took the film."

"I—I—think I saw someone," Mary whispered. "I was so shocked I—I guess I was wrong."

"In a way," Ira said, "it's all my fault. I should have known this guy was a phony. He came into the room like a ham actor!"

"No, it's not your fault, Ira," Mary replied. "Before I could say anything, it was too late."

"It's sure the neatest trick of the week!" Ira beat his fist on a table. "And while I stand here talking, he's getting away!"

"There is no way of knowing who he is or where he has gone," Joe said forcefully. "It is better that you stay here, anyway."

Mary rose to her feet and edged over to Walter. "Is—is—it all going to start all over again?"

Joe put his head in his hands. "No, my children. There is nothing further to fear. This is merely the culmination of my failures."

Ira jabbed a cigarette in his mouth and lit it. He paced back and forth. Suddenly he stopped. "There still—just might be a way," he muttered. He turned to Walter. "How well did you look at the film?"

"Why I looked the whole thing over with a magnifier. Most of the characters are pretty . . ."

"That's all I wanted to know! Come on kids and you too, grampa! We're going for a ride!" He grabbed Mary and Joe by the arm and marched them into the front hall. He hustled them into their coats and waited patiently while Joe, with oriental nonchalance, buttoned his old fashioned overcoat and adjusted his hat like a woman.

"What's the big idea!" Walter protested. "Where are you taking us?"

"Haven't got time to answer ques-

tions," Ira said. "Hurry up!"

"Shouldn't we turn off the lights?" Mary asked.

"Why be conventional," Ira chuckled. He herded them out the door and into the car. Then he held his hand out to Walter. "Give me the keys."

**G**RUDGINGLY, Walter handed them over and Ira climbed in and started the car. They got underway quickly but Ira didn't turn on the headlights. The car moved rapidly over the winding road in the darkness with only the faint light of the moon to show them the way. Barely half a mile from the house, the engine began to cough and labor. Ira disengaged the clutch and snapped off the key. Without the sound of the motor, the ride seemed more ghostly than ever. They rolled down a long grade and onto the level again. Slowly the car lost headway and the riders tensed. The car had almost rolled to a stop before Ira put on the brakes. He pulled off the road a little and parked.

"Everybody out," he called cheerfully. "End of the line!"

Walter, Mary and Joe emerged from the car into the gloomy night.

"I think it would be best if we all held hands," Ira said. "I'll go first and you follow in line." Suiting action to word, he took hold of Joe's hand and stepped off into the brush. Walter followed right behind him, holding onto Mary's hand. They had walked about fifty feet when Ira stopped, lifted a branch and in the dim light they saw a long, sleek automobile.

"Very comfortable," Ira commented. "Newest model too."

Walter opened his mouth to say something then closed it. The four walked over to the sedan and climbed in. In a few minutes it rolled out of its bushy hiding place and onto the road.

Ira drove for a few blocks without lights then snapped them on. Then he turned to Joe. "How do you like it?"

Joe smiled. "It's at times like these that I wonder if perhaps you really ARE a sorcerer."

"Appearances are deceiving, old sock," Ira replied. "I had to have a car to get to the Hall's and I thought it would be advisable to park some distance away. The exercise, you know. As it turns out, it was a good idea. I rather expected some kind of sabotage had been effected on Walter's chariot. They probably drained all the oil out of the crankcase."

"What!" Walter gasped.

"Well after all," Ira pointed out, "there are only two things our clever friends could do to avoid a chase. Number one, attach a bomb to your car or number two, disable it. In spite of what you read in books, wiring a car up with a few sticks of dynamite is a great deal more than a way of killing a few minutes. It takes a good deal of time to do the job properly. The easy way is to take the drain plug out of the crankcase."

"Oh Walter!" Mary moaned, "our new car!"

"Don't let it bother you kids," Ira said. "You can buy another one when we get back."

"Back? Where are we going!" Walter demanded.

Ira drove the big car onto the ferry dock. The last ferry was standing at the slip and Ira paused long enough to pay the man at the gate. After he closed the window, he turned and gave Walter a broad smile. "We are going to take an interesting trip."

"Where!" Walter and Mary chorused.

Ira let the car roll forward onto the ferry. He set the brake then looked at his watch. "I'll tell you in exactly

three minutes."

Walter started to fume. "Joe, what is he up to? Make him turn this car around and take us home. This has gone far enough."

Joe turned to face Walter. "It's all right, my son, Ira knows what he is doing and you are far safer here than you would be at home."

Walter relaxed in his seat and closed his eyes. "Oh why did I ever get mixed up in this?" he moaned.

Just then, the ferry's motors started and almost immediately they were under way.

Ira lit a cigarette. "Would you like to go upstairs or do you want to stay here?" he asked Walter.

"I won't budge an inch until you tell us where we're going!"

Ira smiled. "Well, you are going to have a sort of Cook's tour of Agharti."

## CHAPTER VII

WALTER stirred and moaned as the big black sedan came to a stop. He opened his eyes on a cold, wet, half-dawn. The car was standing by a sentry's post and a soldier was walking toward the car. Ira leaned across the window-sill and held out a card for the MP to see. The soldier examined it briefly with a flashlight then straightened and saluted. Ira returned the salute and the big car slid forward.

"Ho hum," Walter yawned. "Where are we?"

"Oh, you awake now sleeping beauty?"

"And hungry," Walter finished. "But, where are we?"

"This is what is known as an Army Air Base."

"Huh?"

"As you no doubt know, I was a General during the war. I can still

throw a lot of weight around."

"Well what are we doing here?"

"You'll see."

Joe sighed restlessly but went on sleeping. Walter laid his head back on the seat and had just closed his eyes when again the car slowed and stopped. He blinked his eyes open and yawned. They had stopped in a small parking area near an air field. The sound of rumbling engines shook the car and men scurried busily here and there. The noise awakened Joe and he stretched.

"Better wake Mary up," Ira suggested. "We have just about enough time to eat." He switched off the engine and gathered up a few items from the glove compartment.

"Where are we?" Mary asked sleepily.

"We're at the jumping off place," Ira chuckled. "Come on. Let's eat."

Walter shivered as a cold, fine mist struck his face. Joe and Ira went on ahead, Walter and Mary following. They walked around the end of a small building to a doorway. An MP stood before it but opened it as Ira approached. Inside, a small man in a Major's uniform got up from a desk and walked over to greet Ira.

General Stern?"

"They phoned you were coming. I'm Major Whetstone of Security."

Ira shook hands. "Glad to meet you Major. I've heard some very good reports about you."

The Major colored slightly. "Nothing very outstanding, I imagine. It's an honor to have you with us, even if it only for such a short time. I have all your papers. All you have to do is sign them. Colonel Haseltine made the arrangements with Hickham."

"Now that's what I call service," Ira commented.



"Perhaps you and your friends would like some coffee or something," the Major said. "I took the liberty of ordering some things for you. They ought to be here in a minute or so. Is there anything I can do for you now?"

"Looks like you've done just about all there is to do," Ira replied, glancing through the papers. "Thank you very much, Major. I appreciate it."

The little Major's grin broadened. "It was a pleasure, General. You G-2 men have your hands full without a lot of red tape and paper work to wade through. If you'll excuse me now, I'll go out and make sure that everything is satisfactory." He nodded to Walter, Mary and Joe and closed the door.

Ira chuckled. "Indeed, man works in nefarious ways his blunders to perform."

"You know," Walter said thoughtfully, "it has occurred to me that you are deliberately keeping me in the dark as to what is going on."

Ira opened his mouth to reply but was interrupted by a knock at the door. Joe opened it and admitted two men carrying trays. They set them on the desks then the taller of the two looked at Ira. "Will there be anything else, sir?"

"Coffee, cinnamon rolls, toast, scrambled eggs, bacon. Hmm, I can't think of anything. Sergeant, I'll remember you in my will."

The sergeant looked a little flustered for a minute then said, "yes sir," and beat a hasty retreat. His companion was right behind him.

Ira smiled. "Come on folks, let's pitch in. Lunch is a long way away."

They didn't need any urging, and devoured the food as though they hadn't eaten in months.

"Peculiar thing," Ira said between mouthfuls, "a little excitement sure

sharpens the appetite."

"Amen," Walter replied.

SILENCE reigned until they worked their way down to a second cup of coffee. As Ira drank, he busily scribbled on a small pile of blanks and forms.

Walter put a cigarette in his mouth and inhaled. "You know, in spite of the fact that I'm a professor, I sure enjoy this adventurous living."

"Ah, the college professor is just a front," Mary laughed. "You don't know yourself at all. You're not nearly as stuffy as you would like the world to think you are."

"I kind of thought a little action would soften him up," Ira said, tossing another form aside. "When I first saw you two I couldn't for the life of me picture you going into the wilds of Mexico and bringing back those manuscripts. Walter just didn't look the type."

"Well after all, a professor has to keep up appearances," Walter explained. "We have to be an example to those we teach."

"Oh what rot!" Ira chuckled.

Mary laughed. "I can always tell when Walter's decided to stop being a professor. He takes a cigarette out of his pocket, lights it, and from then on he's a changed man. He ought to do it oftener."

Ira looked up. "Come to think of it, he HASN'T smoked a cigarette before. At least not while I've known him."

"And come to think of it," Walter said, "you haven't answered my question. I said I thought you were deliberately keeping me in the dark."

"Maybe I am," Ira replied seriously, "but some people are impossible to reason with. In your former state of mind, you are definitely a stick in the mud so I had to keep a lot of things

to myself. As it is, I haven't got time to explain everything but I can make a start. What do you want to know?"

Walter smiled. "You might start by telling us why you insist on taking us to Agharti."

"Oh that's easy," Ira replied. "You admitted that you studied the restored microfilm with a compound lens."

"So what?"

"Well, the film is gone and beyond a doubt it's been destroyed. But, you saw it, you studied it and in your memory you have a complete recorded picture."

"Oh for heaven's sake, I can't remember a blasted thing that was on it! The characters were totally unfamiliar and there isn't a chance of my recalling more than one or two and I doubt if I can do even that!"

Ira smiled. "Well don't let that trouble you. In Agharti we have the means of reproducing those pictures out of your memory."

"Oh," Walter said. "You mean under hypnosis I could remember them?"

"No, that isn't what I mean at all. I mean we can literally reproduce what is in your memory as a picture."

"Impossible!"

"Oh don't go getting stuffy on us again," Ira answered. "Why don't you wait and see?"

Walter laughed. "Okay, I'll reserve judgment."

"What about me?" Mary interrupted. "I didn't see the film or anything and besides, Joe saw the original manuscripts."

"That's true," Ira admitted, "but the characters on the originals were illegible. They couldn't be distinguished. When Walter focused ultra-violet light on them, the minerals in the ink fluoresced and he took pictures of them. The images on the film were probably

as clear as the day they were originally made." Actually neither Joe nor Walter saw what was on the manuscripts. The only eye that saw was the camera."

"Oh, I see," Mary said, "but do you really think it's necessary that I go? After all, I have . . ."

"My dear Mrs. Hall," Ira said decisively, "would you rather go home where you could be used as a hostage? Even if the enemy couldn't force us to stop, they certainly could make life unpleasant for you. It was just an idea on my part that Walter would be happier with you alive."

Mary smiled sickly.

"I guess that just leaves one more question," Walter said. "What happens now?"

"For that answer, my friends, all you have to do is follow me." Ira arose from the desk, wiped his lips with a napkin and walked to the door.

Mary looked at Joe. "You've been awfully quiet."

Joe sighed. "To be quite candid, Ira bores me with his long winded explanations."

"People who live in glass houses should dress in the basement," Ira grinned, motioning them to the door.

OUTSIDE, they were met by the short Major. "I was just coming to get you, General. Everything is ready. The rainmaker says it's CAVU from the coast to Hickham so you're in luck. I put gear inside for the four of you. I hope the fit isn't too bad."

Ira shook his head wonderingly. "The world could certainly use a few more Majors like you."

"Oh it wasn't anything," the Major replied. "Life's pretty quiet around here most of the time so I welcome a little activity. I wish I were a G-2 man," he added wistfully. He guided them to a staff car and waited until

they were all safely inside before climbing in the driver's seat. He kept up a running fire of chatter about the weather, the political situation and life in the army. Each time Ira made a comment, he absorbed it like an African native receiving the first light from the morning sun. Walter and Mary became so engrossed in this spectacle of hero worship that they paid no attention to where the car was going until it stopped and they noted the pounding of heavy engines nearby. Through the morning mist, they looked out of the window at the gigantic fuselage of a B-29.

"Well here we are," the Major said brightly. "I think you'll like her, General. She's only logged four hundred hours and the engines are brand new."

"Ah—er—are—we going on that!" Mary asked in a terrified voice.

Ira held the door open for her. "We'll have to," he laughed. "Bus service has deteriorated since the war and hitch-hiking is even worse."

Mary stepped out of the car holding Walter's hand tightly and together they walked to the ladder leading up to the belly of the air craft. Two crew members helped them aboard. The Major stood below, shook hands with Ira and then stepped back. Ira climbed to the top of the ladder then bounded in unassisted. One of the crewmen faced him and gave the air corps impression of a salute.

"Carry on," Ira waved. "The show is yours."

The lieutenant grinned, picked up an intercom set and bellowed, "Take it away, Pete!"

Ira laughed and guided the three back into the bow of the plane. In a cramped compartment, they found canvas seats had been set up for them. They had just settled themselves com-

fortably when the huge plane shivered slightly as the great engines began winding up.

"Well, I guess we're off," Walter sighed.

"I've often thought so," Joe agreed dryly. "Why did I let Ira take me on this hair-brained expedition!"

"You still don't like to fly?" Ira asked.

"To put it quite bluntly, no! However, it is the way we disembark that I like the least."

Mary looked at Joe questioningly, then at Ira.

"That's a small point I haven't mentioned," Ira said. He smiled apprehensively. "You see, a B-29 is awfully big and there isn't anything that even remotely resembles an airfield near Agharti. Normally we would land in Burma and go on by our own quaint means of transportation. That avenue being closed and since neither you nor Walter are up to traveling on foot through the mountains, we—well—that's what those parachutes are for."

"I want to go home," Mary moaned.

"What about you?" Ira asked Walter.

Walter grinned, sickly. "I'm feeling more like a professor every minute."

## CHAPTER VIII

"—we have about three minutes.

When I give the signal, line up over here with your left shoulder touching the wall." Ira paused and examined the harnesses on all the parachutes. "You see this thing?" He extended his own rip cord. "Now fasten it on this static line like this." Obediently, the three hooked themselves up. "All right now, put it behind your left shoulder and hold a loop under your armpit. Make sure your cord slides freely."

Ira glanced at his watch again then un-snapped his line. "From now on, I'm the jump master. When I give the word, out you go."

The young lieutenant who had helped them aboard, was standing beside the open port. Walter, Mary, Joe and Ira were heavily bundled in high altitude flying gear. Ira braced himself against the fuselage and watched the terrain below. At last, he saw what he was looking for and nodded to the Lieutenant who barked something into the earphone. The big B-29 began to make a wide circle over the snow covered valley below.

"It'll help if you scream when you go out," Ira suggested.

"I won't have any trouble," Mary quavered.

"All right now," Ira said, "look at this. Keep that loop under your left arm, then take a hold of this. This is your emergency rip cord. Count four; one, two, three, four, like that. If your big chute doesn't open, pull this cord and that will open the emergency chute. Now, is everybody ready? When you go out, dive over! Don't jump. Dive!" Ira nodded to Walter. Walter grinned and still holding Mary's hand, dove head first through the opening. Mary's "I don't want—" was cut off as she was jerked through the port behind him. Two white mushrooms blossomed forth and Ira nodded his satisfaction.

He nudged Joe who stepped to the opening then turned and opened his mouth. With a fiendish grin, Ira shoved him violently and Joe toppled out. All Joe could manage in the way of a scream was a little "eeeeeeekkk," as the hungry earth seemed to reach for him. He was nearly jerked in half by the opening parachute then everything was still and quiet. Just a breath of wind against his chin and beard

was all he noticed. He seemed to be hanging stationary in the air, half-way between heaven and earth. He turned his head and peered upward. Nearby Ira swung gently to and fro, seemingly hung on a cloud also.

"Nothing to it!" Ira bellowed to Joe.

"Perhaps, perhaps," Joe muttered. He turned his attention to Walter and Mary. They were several hundred feet below. Like Joe and Ira, they were hanging quite close together. Even as Joe watched, they seemed to touch the snow and the mushrooms of silk billowed down over them. Joe's attention was caught by a yell from Ira. "Flex your knees!"

**O** BEDIENTLY Joe bent his knees slightly and at that instant, the ground seemed to swat him. Half covered with snow, he tried to get up but great folds of parachute entangled him at every turn. Weakly, he tried to throw the yoke off but only succeeded in entangling himself further. Resignedly, he relaxed.

A few minutes later, Ira jerked his covering from him and reaching through the maze of cords, unfastened the harness buckles. Patiently, he opened the way in the webbed cordage for Joe to step through. Joe painfully brought himself erect, aching in every joint.

"It wasn't so bad now, was it?" Ira asked.

Joe brushed particles of snow out of his eyes, nose and beard. "To a man who likes to die, it should be enthralling."

"Come on, you old duffer. Admit that it was fun!"

"In my long and colorful career," Joe said softly, "I have never disliked anyone so intensely before. Unhand me!" Almost violently, Joe shook himself free of Ira's supporting arm.

Ira laughed. "Sorehead!"

"Hi! Are you guys all right?"

Ira turned to see Mary and Walter floundering through the snow toward them.

"I'm all right," Ira called. "So's Joe but he won't admit it."

Their faces flushed, and laughing, the Halls joined them. "It was fun!" Mary giggled. "After I made the jump, of course."

"I've always wondered what it would be like," Walter said breathlessly.

"Now you know," Joe replied. "Would you like to try it again?"

Walter and Mary laughed.

"Come on, Joe," Ira insisted. "Cheer up. It was a bit undignified but it was quick."

"The day that you set out to cross the mountains, the others in our group wanted to go and rescue you. I stoutly maintained that we should let you die. As yet, I have had no reason to change that opinion. I suppose the next time we return, you'll have me shot from a gun on the delightful pretext that it is quicker than flying." Joe paused and chuckled. "It was a novel experience, though."

They all laughed gayly and at Ira's instructions, trudged toward the north end of the valley. The B-29 swept over their heads quite low and they waved. The lieutenant, hanging precariously out of the open hatch, waved back. The throttled down engines picked up in speed and the wing flaps closed. Before the four reached the end of the valley, the sound of the motors could no longer be heard.

"How far do we have to go?" Walter asked, breathing hard.

"About a mile," Ira answered. "We've got good weather fortunately."

They lapsed into silence. Talking was hard in this high altitude. At the north end of the valley, they entered

a rocky defile which contained very little snow. They plodded through the narrow crack in the rock, eyes on the ground intent on keeping their cumbersome feet on firm footing. So intent were they on their feet, they didn't notice Ira stop and run into one another. Mary glanced up and emitted a little shriek. Hardly more than thirty feet away, barring their path, stood a huge, pink thing. It looked like a man in some ways but it was without form or features. To Mary, it seemed to tower over them.

Ira fumbled in his pocket and hissed: "Get down!"

THE three crouched in their tracks. With this movement, the pink thing stirred. Just then, Ira tossed a small, round object through the air. Expertly the hideous creature caught it and bent its faceless head to examine the thing and in that instant, it exploded with a shattering crash. Things whizzed above their heads, and ricocheted off the rocky walls.

Ira got up and heaved a long sigh. "Handy thing," he muttered. "Mi-gö was too curious for his own good."

The others straightened up slowly. Their eyes studied the remains of the grotesque creature. It was almost headless and it quivered and twitched. Mary moaned and turned her head away. Walter groped inside his flying kit and extracted a cigarette. Ira extended a hand and took a cigarette. Unthinking, Walter reached back into his jacket and took out another. Ira snapped his lighter and held it out to Walter.

Finally Ira smiled. "One way to end the meat shortage," he said brightly."

"Mi-gö?" Walter asked.

"It's certainly no relative of mine. Shall we go on? We've already met

the welcoming committee."

Gingerly, they walked forward and stepped over the now lifeless form. The gaiety was gone and the harsh, hard brilliance of the ice and snow grated on their nerves. Without the insulating coating of humor, the mountains are terrible things. The majestic grandeur of the "roof of the world" is visible only at a distance when the mighty mountain peaks are only a white frieze on the horizon. Standing next to them, or worse, among them, they rise like towering, angry giants as though withholding a destroying hand only because it pleases them to do so. Crag and peaks reach such heights they seem to penetrate the heavens.

Walter felt like an ant, crawling across a tremendous ice cream cone. There was something raw and brutal about the landscape that chilled him. A few days ago, it had been a spot on a map. A little later, it had been a place of high adventure. While the B-29 had rested like a giant beetle on its straggled legs at Hickman Field, Walter's eyes had sparkled thinking about the panorama of the mountains that few white men see at first hand. In Burma, while the great plane had again squatted to drink of thousands of gallons of gasoline, he had thought and tried to imagine the chill sharpness of this air. Now that he was here, he almost wished he were again in Burma.

The wind began to pick up as they plodded along and slight flurries of ice picked up from the ground and stung their exposed cheeks. Suddenly there was a rumble and the party stopped. The ground beneath their feet shook. From where they stood, between the V of towering mountains, a long slope was visible, and the entire slope seemed to shake before their eyes.

"This ought to be interesting," Ira said. "I bet you've never seen one of these."

Even as he spoke, the slight shifting of the great snow field became more pronounced and at the upper edge, a black crack appeared. With seeming slowness, the whole field of ice and snow began to pour like sand down the long slope and plunged madly off the precipice at the bottom. As the avalanche reached its peak, the rumbling, roaring and trembling of the ground was tremendous. The roaring persisted long after the last vestige of snow had plunged over the ridge.

"What makes the noise?" Walter asked shouting.

"Sound takes time to travel up here," Ira replied. "Believe it or not, that snow field is twelve miles away."

"Incredible!" Walter breathed.

Finally the sounds of the avalanche died and the party plodded on. They were startled presently by the sound of a human voice.

"Hello there!"

Ira looked up and waved. "Menen Sihaouni!" he called back.

**P**EERING into the distance, Walter saw two figures coming to meet them. Soon he was able to see them clearly. One was a tall, stooped man with a short, black beard and the other was shorter and very oriental looking. In fact, he was a graphic representation of Fu Manchu. The two hurried forward to meet them and the tall man grasped Joe's hand and pumped it vigorously.

"Muhammed Tovarich!" he exclaimed joyfully. "Why didn't you let us know?"

"The man without manners who is conducting our tour wouldn't give me the opportunity," Joe replied.

The oriental grinned. "What did

you do to him this time, Ira?"

Ira laughed. "I made him jump out of an aeroplane."

The two newcomers laughed uproariously.

"Same old Ira!" the tall one belated, shaking his hand. "Where did you land?"

"In the valley of Tall Shadows," Ira replied. We met Mi-gö on the way but other than that, our trip has been uneventful."

Instantly, the faces of the two men sobered. "But—but you are alive!" the bearded man gasped.

"I used a hand grenade," Ira explained. "Hand to hand combat is a bit strenuous."

"I don't understand," the oriental interrupted. "The snow men haven't been seen around here. They never venture within miles."

"I think the plane attracted it," Joe replied. "We flew over the valley for quite some time before jumping out."

Ira shook his head doubtfully. "I don't think that's the explanation. I candidly think Mi-gö is a tool of the enemy and they certainly have good reason for trying to kill us, you know."

The tall man stroked his beard. "Once I might have disagreed. As a matter of fact, I did. But now, maybe—maybe I admit they aren't unreasonable brutes. Perhaps you are right after all."

"Well, be that as it may," Ira replied, "we must observe the social amenities."

"For once," Joe added smiling.

Ira went on unabashed. "Professor and Mrs. Hall, Walter and Mary if you prefer, this is Ivan and Kung, self appointed watchmen and sentries. No doubt you'll see a lot of them. In their spare time, they publish a newspaper."

"At least we can read!" Ivan growled.

"Some of your subscribers don't think so."

Everyone laughed and Ira motioned the party onward. A few hundred feet more and they came to a triangular cave opening. Unhesitatingly, Ira walked in and the rest followed behind. In the gloom, Walter and Mary crowded close together. They had taken little more than thirty steps when Ira stopped. He fumbled a moment with something they couldn't see then suddenly the cave was brilliantly illuminated. A section of wall swung outward, revealing a smoothly lined room approximately three hundred feet square and seventy feet high. In a corner of the room, some peculiar vehicles rested, looking oddly like big canoes made of metal.

Walter and Mary followed Ira and climbed into one of the canoe shaped affairs. When they were all settled, Ira reached down and touched a small stud on a gleaming panel. Slowly the canoe rose from the floor, rocking slightly as though it were floating.

Apprehensively, Walter leaned over but he could see nothing holding it up.

"Don't worry," Ira said. "It's never been known to fall."

Walter looked at him questioningly.

"Better enjoy the ride," Ira smiled. "You wouldn't believe me if I told you how it works anyway."

Just then the machine began to slide forward, moving to the far end of the room. It entered a tunnel and picked up speed. Walter noticed that it hung almost in the center of the tunnel and when it made a turn, it banked. The smooth wall whizzed by at a rapid rate and the swaying motion seemed to amuse Mary.

She giggled. "Gee! It's better than a roller coaster!"

Even as she spoke, the machine

burst outward from the small tunnel into a huge, brilliantly lighted cavern stretching so far as to stagger the imagination. In the center, was a cluster of buildings of various colors and in the center of the cluster, rose five gleaming spires, golden in color reaching almost to the roof of the great cavern. Walter guessed that they must be over a mile and a half in height.

THE queer machine in which they were riding was poised about six feet over a small metal strip and it followed the strip invariably. As they approached the buildings, Walter saw that he had misjudged the size of the city. It was only the colossal cavern that had made the cluster of buildings seem small. In reality they stretched out for many miles. Around the city itself, beautifully landscaped lawns and gardens flourished as far as the eye could see and many of the canoe-like affairs were coming and going on a maze of metal strips.

It suddenly occurred to Walter that although they were traveling at a good rate of speed, there seemed to be no wind. "Why don't I feel any wind?" he asked Ira "It's almost as though we were enclosed."

"Stick out your hand," Ira suggested.

Walter tried to put his hand over the edge of the machine, but as his fingers came even with the edge, they touched a smooth, but invisible surface. An exploratory finger found that it ran in an arc over his head to the other side.

"I—I feel something," he stammered, "but there isn't anything there!"

"It's a unified force field," Ira explained. "Actually, there's nothing there but the force field prevents the motion of matter. It's quite simple

when you understand it."

"What!"

Ira gave Walter a malicious grin. "How far is it from the inner side to the outer side of the edge?"

Walter glanced at the edge of the machine. "About an inch."

Ira chuckled. "That's where you're wrong. It's over two thousand miles."

Walter just stared.

"This is how it works," Ira replied. "The machine creates a space warp which is an inch in width relative to your eyesight. In reality, the warp covers a distance of two thousand miles and then some. Naturally you can move your finger through an inch of space but you can't move your finger through two thousand miles at the same time. It forms an absolutely unyielding shield. Your finger would have to be relative to both the warp and to normal space in order to pass through it. It's a lot better than glass and it's absolutely accident proof."

"Oh Walter!" Mary interrupted. "Quit talking and look! Isn't this the most beautiful place you've ever seen!"

Walter nodded slowly. "It certainly is."

"It's beautiful," Mary breathed again. "It's almost like pictures of heaven."

The machine was now passing through the city and slowed down as it approached the base of the golden towers. It drew to a smooth stop before an arched entrance. Ira pushed in a lever then hopped out. "End of the line!" he called. "Everybody out!"

"Seems to me I've heard that before," Walter replied.

The group alighted and Walter and Mary looked about, awed. Finally they turned back to the machine they had come in and Joe was still seated, his eyes closed, his features tranquil.



"Joe?" Mary asked tentatively. "Are you all right?"

He drew a long sigh. "Yes, I'm all right." He opened his eyes and gazed about him. Sighing again, he whispered, "home at last."

## CHAPTER IX

WALTER awoke with a start and his eyes took in the unfamiliar surroundings. Then his memory caught up with his thinking processes and he relaxed again. The room was of moderate height, furnished in a rich ivory and soft lighting seemed to come from everywhere. As he sank back into the silken luxury of his bed, he turned to look at Mary. She was still sleeping soundly, a little smile on her lips. Moving carefully, Walter got out of bed and looked around the room.

"I wonder where my clothes are?" he thought.

A low, faint musical note sounded and a small section of wall seemed to disappear, leaving an opening of about three by six. Within the opening, hung several suits of clothes all about Walter's size.

"Now that's what I call service," Walter muttered. He extended his fingers and they passed through the opening in the wall. "I'll have to ask Ira about this. I wonder if the wall is the illusion or if the opening is."

He selected a gray, tweed suit and lifted it out. Neatly folded within, he found a white shirt and a green tie. Within the shirt, he found a pair of gray, silk sox. He glanced back at the closet again and it was noticeably wider. Next to the suits was a rack with seven pairs of shoes hanging from it.

Walter took hold of a black pair but they wouldn't budge. He shrugged and reached for a pair of brown

huaraches. They wouldn't move either. He felt around for a catch but found nothing. The shoes seemed to be glued to the rack.

"Oh well," he sighed. "I guess these gray ones would be better anyway."

The gray oxfords came off the rack without difficulty.

"What are you doing, darling?" Mary asked, sleepily.

"Having my clothes selected for me."

Mary gave him a puzzled stare.

Walter scratched his head. "Now I wonder where the shower or whatever it is might be."

Immediately another opening in the wall appeared, revealing a green tinted room.

"See," Walter smirked. "Nothing to it!"

Mary's jaw hung slack as Walter went into the bathroom. A toothbrush and a bottle of orange liquid were resting side by side on a glass shelf. Walter was about to try the stuff when Mary called.

"Darling, where are my—"

A slow grin spread over Walter's face and he stuck his head out the door. Mary was standing in the middle of the floor, holding her hand over her mouth. A large section of wall had disappeared, revealing a beautiful plastic dressing table, a set of shelves and a closet filled with clothing.

"Enjoy yourself dear," Walter laughed and ducked back into the bathroom. He turned to see that a new shelf had appeared and on it were towels, a bar of something that looked a little like soap and some underwear.

"This place is beginning to give me the creeps," he muttered. "Now I wonder where the shower is."

In answer to his question, a small, flat basin swung out from the wall on a shiny metal arm and a thin metal

tube projected downward from the ceiling. As he watched, the tube lowered to the level of his shoulders then swung aside like a shiny metal snake. Hesitantly, Walter took off his pajamas and stepped onto the basin with the bar of soap in his hand. He soon found the secret of operating the shower. One merely wanted water in a certain place and the metal snake sprayed it there. The temperature of the water adjusted itself to one's desires too, Walter found, so he finished with an ice cold rinse.

WHEN he stepped out of the basin, he noted that there was no water on the floor. Somehow it had all been caught in the little basin.

As Walter dried himself, he stuck his head out the door. "Do you want to take a shower dear?" he asked.

"I've got one of my own," Mary replied. "I decided not to wait. You always take—too—oooo—eeeeeeeeekkkk!"

"What is it?"

"A snake!"

"Oh that's just the shower!" Walter called.

"Well I wish it'd stay still!"

"Coward!"

Walter returned to the bedroom and finished dressing. He bent over the mirror of the dressing table to tie his tie. The face that looked back at him wasn't quite what it should have been. Walter's brow furrowed and he moved slightly to one side. The image responded by moving in the opposite direction. Then he realized what was wrong. The image in the mirror was not reverse.

"So that's what I look like," he smiled. "Hmmm, not bad!"

Mary returned to find Walter making faces at himself in the mirror.

"For goodness sake!" she exclaimed. "Have you completely lost your

mind!"

Walter smiled. "Certainly. Life's a lot more fun that way."

"Nut!" she replied, and shoved him away from the mirror. "I'm sorry I'm so slow, dear. I'll try to hurry."

Half an hour later, the Halls stood in the center of the room.

"Now I wonder how we got out of here," Mary said. "Where's the door?"

Instantly, an arched opening appeared in one side of the room.

"Just like that," Walter replied, chuckling.

"I'll NEVER get used to this!" Mary sighed.

"Stick in the mud!"

They walked through the archway and into a corridor.

"Well, where do we go from here?" Mary asked.

"Well—," Walter replied hesitantly, "your guess is as good as mine." The corridor stretched both ways for several hundred feet and seemed to come to a dead end. There were no features, doorways or other marks of identification.

Walter opened his mouth to say something and at that moment, an arched doorway appeared in the blank wall a few yards away. Through the opening, a man over seven feet tall stepped. His skin was black, with no trace of brown, the apparent texture being like black velvet. His features were quite aquiline and his eyes were dark green. He smiled dazzlingly at Walter and Mary and made a slight bow.

"May I wish a good morning to our honored guests," the giant said. "I am Vana Shanu."

"Ah—how do you do," Walter croaked.

Still smiling, Vana replied, "no doubt my appearance startles you. New-comers are often surprised but they

become used to me in time, I find."

"Why—yes, of course," Walter mumbled, embarrassed.

"There's no need to be embarrassed at my appearance or shall I say, peculiarities. All the other members of my race look like me."

"Oh?" Walter said questioning.

"Yes," Vana replied. "You see, I was born on the planet you call Venus."

Walter looked at Mary who was trying hard not to stare at the strange man. "This is my wife, Mary," he said, "and I am Walter Hall."

"I am very pleased to meet both of you." Vana Shanu gave them another dazzling smile. "Shall we go to breakfast?"

THEY walked in silence through the opening Vana Shanu had just come through. Neither of them were able to find words. They had barely stepped through the opening when the floor seemed to drop out from under them and they fell gently but rapidly. The Halls were paralyzed with horror but the giant seemed to enjoy it. They stopped in a few seconds and found themselves standing on what appeared to be a solid floor.

Vana Shanu chuckled which sounded more like a deep rumble. "As my good friend Ira Travers would say, this beats walking."

Walter smiled sickly. "Ah—yes."

"If you'll come this way, please," Vana said.

Again they walked in silence through a magically appearing doorway into a large room in the center of which was a table. In a far corner, Joe was sitting at a desk operating a machine that looked much like a typewriter. He smiled at Walter and Mary then went back to his work.

"These are Joe's quarters," Vana

explained. "He is to be our host for breakfast."

Another door appeared and Ira Travers came in. "Well, greetings comrades!" Ira said. "I suppose 'big stoop' has let the cat out of the bag. At least, that's what I gather from your expressions."

"I told them where I was from, Shorty, if that's what you mean," Vana replied. "I can't help it if it shocks everybody."

Ira laughed. "But you sure love doing it, don't you."

Joe arose from his desk. He was regally dressed in an eggshell blue robe with a cowl around his shoulders. He wore golden slippers on his feet and his short beard made a sharp V on the neckline of his robe. He was wearing a small black cap on his head from which dangled two gold interlocked triangles. They jingled as he walked toward them.

"Good morning, my children. I hope you slept well."

"Oh—yes indeed," Mary replied. "It was a little—ah—puzzling but we're getting used to it."

"Excellent," Joe smiled. "Now, shall we eat?" He guided Walter and Mary to the low, round table and seated them on cushions. When everyone was seated comfortably, Joe smiled benignly at Mary. "What would you like? The menu is unlimited."

"Is this going to be like all of the other things?" Mary asked wistfully.

"Just like fairy tale magic," Joe replied.

Mary beamed. "In that case, I think I'd like a glass of fresh orange juice—and—"

The faint musical note was heard again and a small, silver dish, filled with cracked ice and a glass of orange juice in the center appeared before her.

"—and a white mango. Walter has

told me so much about them."

The mango was by then, resting on a small, glass dish.

"That's strange," Mary giggled. "It's just the way I pictured it."

"I'm afraid it isn't a mango," Walter informed.

Joe laughed. "The equipment which does all these things must use your mental image as a matrix. These things are created for you just the way you picture them. Perhaps I might help."

A dish appeared in front of Joe containing several genuine mangos. Mary looked at them then back at the object she had requested. It had a rose pink skin and a tiny flower blooming from the tip. Mary looked again at the bowl of mangos and shook her head.

"I like mine better," she smiled. "From now on, this is what a mango looks like."

Joe shrugged his shoulders and the bowl of mangos disappeared. Mary closed her eyes for a moment and in swift succession, soft boiled eggs, crisp toast, and coffee that smelled better than any coffee should, appeared before her. Some things were in glass, some in silver and some in gold tableware.

Joe turned to Walter. "Can you manage now?"

WALTER nodded and visualized his breakfast which appeared instantly. Almost simultaneously, a bizarre conglomeration of foods appeared in front of Ira, Joe and Vana.

Table conversation was rather general during the meal, guided for the most part by Joe. Finally the meal came to an end and the last of the dishes disappeared.

"Frankly," Walter said, "that meal was the most delicious thing I've ever eaten!"

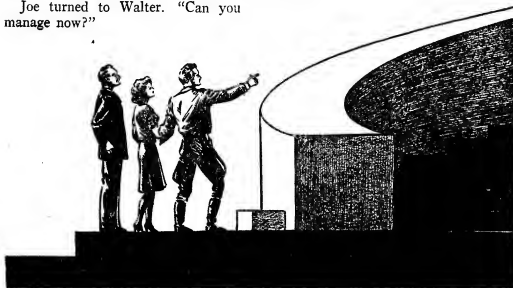
Mary pouted. "Oh, so you don't like my cooking!"

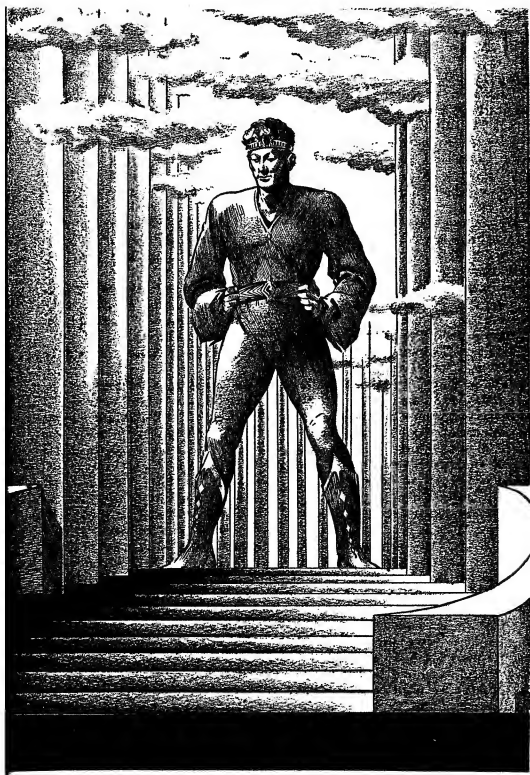
Ira laughed uproariously. "From now on Mary, you'll have to play second fiddle to a machine."

"Nonsense," Walter said tactfully. "If Mary had everything at her disposal, she could cook circles around any machine."

"Why thank you dear," Mary said, "but you're the biggest liar in the world."

They all laughed and Ira lit a cigarette. "You know," he said thoughtfully, "I've often wondered how Vanu can eat that junk he calls food. Don't they have anything decent to eat on Venus?"





"I've often wondered why they don't have anything decent to eat on earth,"

Vana replied, "so I guess we're even."

"If it's not prying into anything,"

Walter said, "could you tell us how you got here?"

Vana glanced at Joe, who nodded his head. "In a space ship," he replied.

"Oh," Walter said. "But—but—"

Vana Shanu smiled. "Why did I come? Because I was curious. Someday I plan to go back and tell the people all about the strange creatures that live on the earth."

Walter laughed. "I guess we DO seem strange to you."

"Not really," Vana replied. "We have many things in common, much more than you realize. Maybe someday you can visit our planet and see for yourself."

Mary sighed. This whole city is full of nothing but miracles."

"Oh no," Joe explained. "Actually there is nothing miraculous about it. Everything is quite understandable when you learn how it is done. In time, you will come to learn the simple principles on which such things depend. Indeed, it must have taken a tremendous intellect to have originated such classically simple things."

A throaty and rather musical voice answered, "Thank you."

Walter and Mary who were by this time used to unexpected things merely looked at the newcomer without amazement. Ira, Joe, and Vana, however, were gaping like goldfish out of water. The stranger was a young man, simply dressed in a white silk blouse and rather closely fitting trousers. Around his forehead was a thin, gold band and on the front, an intricate geometrical device, studded with vari-colored gems. He smiled revealing even, white teeth.

"I am glad the time has come," he said softly, "when we may meet, Mu-

hammed Jolah. I've looked forward to it with a great deal of anticipation."

Joe touched his beard lightly, his frown of puzzlement deepening.

"Do not be alarmed," the young man said, coming nearer. "I have watched you for many years and have admired what you have accomplished. If I may introduce myself, I am he who is called, "King of the World."

JOE toyed with the tip of his beard for a moment then arose and faced the newcomer. Somehow I could never bring myself to believe you were no longer in existence," he said softly. "I have been searching for a long, long time."

"I am sorry you have had to wait so long. Perhaps what I have come to offer you will in some way reward you. Will you come with me?"

Joe turned and gestured toward the others.

"My invitation is inclusive."

Joe smiled and nodded his head.

The King of the World turned to the group. "This city of yours which you call Agharti is truly wonderful but I am sure you will find the real Agharti more amazing still." He waved his hand and for an instant they seemed to be in a dark void. Then it was light again and they were standing in a tremendous room. Walter was instantly shocked at the incredible grandeur about him. It was impossible to tell how large the room was. It could have been outdoors except for the thin glistening pillars which rose at periodic intervals and a dome-like ceiling which could have easily been mistaken for the sky. There were even small clouds at the extreme height of the pillars. Suddenly, Walter became conscious of music. It was faint yet all pervading. It seemed as though thousands of voices were singing, blended into a

chorus of impossible perfection. There were so many instruments playing that not even the keenest ear could separate one from another. The air was strangely sweet and seemed to softly caress his face, and everywhere there seemed to be an atmosphere of serenity yet at the same time it left one with the feeling of electric vitality.

Walter turned to look at his companions and was again shocked to see how different they looked. Vana Shanu's face was shining as though lighted by something within. No longer was his skin like black velvet but more like gleaming satin, and he seemed at least a foot taller. Ira's hair was no longer sprinkled with gray and the tight lines around his mouth were gone. Even Joe had changed, for his eyes held a luster Halter had never seen before and his face was that of a young man.

As Walter turned to look at Mary, he gasped. Never had he seen her look so beautiful before. He couldn't see anything different about her. It was just that everything seemed more intensified, her hair was redder, her eyes bluer and when she looked at him, Walter was sure he had never really seen her before. Walter wondered if perhaps he too were changed in some way and was about to say something when it suddenly occurred to him that the King of the World was gone. He turned around and stepped back instinctively. The King of the World was standing a short distance away but he was several times taller than he had been, reaching now to a height of perhaps thirty or forty feet. He too seemed to glow from within and Walter blinked as he gazed on the radiant figure.

"This is my home," the King said. His voice rolled and echoed through the stupendous hall.

"It's—it's—like heaven," Mary breathed.

A smile played at the corners of the King's mouth. "A most accurate guess."

THE mighty figure stretched forth his hands and between them a golden ball appeared. The surface shimmered and glowed in a variety of colors, some that Walter had never seen before and for which there are no words. The ball settled easily to the floor and Joe, as if in answer to an unspoken command, walked to the ball and stepped within its shimmering surface. Instantly but gently, the golden sphere lifted in the air until it was almost out of sight. Then it moved away and Joe was gone.

"He will return," the King said, "but until he does, I shall send someone to guide you." Then the King of the World faded before their eyes into nothing and was gone.

The four turned to see a figure approaching. He was dressed conventionally and appeared in no way out of the ordinary except perhaps for the expression in his eyes. He smiled as he approached.

"I—guess you know who we are," Ira said.

"I do," the man replied. "The King wishes me to be your host. My name is Simeon."

The four of them mumbled the usual pleasantries then fell silent.

"I know you understand little of this," Simeon said simply, "except Vana Shanu, of course."

Ira looked at Vana quizzically. A broad grin spread over the giant's face.

"Sol You've been holding out on me again, eh Big Stoop?" Ira replied.

"In a way," Vana answered, "but I've never seen this before."

Simeon smiled at Vana. "Now that

you're here, you might like to look around by yourself. I understand that you have achieved the Fourth Degree."

"I had only mastered the third," Vana replied.

"It is possible that you have just mastered the Fourth. You might try and see what you can do."

Vana closed his eyes and bent his head as though concentrating. Gradually his huge figure grew hazy and more tenuous until it was no longer there. For a brief moment he was gone then he returned.

"Just as I told you," Simeon smiled. "Congratulations!"

"Cheerio chums," Vana said waving. "I'll see you later." He vanished instantly.

"Say what's going on around here!" Ira exploded. "People appear, disappear, grow and shrink! I don't know whether I'm coming or going!"

Simeon smiled again. "They don't actually appear or disappear. It's just that you can't see them."

"Now that's a fine explanation," Ira said, impatiently.

"It's a very hard thing to explain but you will come to understand in time. However, bear with me a little and I'm sure a great deal will become clear to you. The King has asked me to show you some things so if you will come with me please."

He made a movement with his hands and a machine, a great deal like the canoe-shaped affair they had ridden to Agharti in appeared. The three climbed in at Simeon's suggestion and he seated himself at the controls. As the craft lifted, it became very dark outside the shield, but it was light within and Simeon smiled reassuringly.

SOON it began to lighten outside. It became brighter rapidly and the landscape appeared as though lighted

by the sun. Then they discovered that it was the sun and they hovered a few feet above a sun-baked plateau. As they watched, a horse drawn vehicle of some kind appeared in the distance coming toward them. It came to a halt a few feet away and a man, clad in rich garments and jewels, dismounted. They watched the man, fascinated, as he plucked the jewels and ornaments from his clothing and threw them away. Then he drew a knife, sheered his long flowing hair and cast the knife on the ground. He turned to the driver and motioned him to go back and turning away, began trudging along the road. In the distance, they could see a row of hills, and it was toward these that the man resolutely marched.

The voice of Simeon broke the heavy silence. "This is the Master, Siddharta Guatama, or as he was called later, Buddha."

They looked back at the scene. The young Guatama was talking earnestly to a ragged beggar. An amazed look passed over the beggar's face then nodding vigorously, he removed his ragged clothing. The young Guatama did the same and in a few moments, the beggar walked away, richly clad in silks and linens while the young Guatama trudged toward the hills clad in rags.

The scene shifted and now this same man, much older, sat under a tree, his face bowed in deep thought. His whole figure emanated discouragement.

Simeon turned to the three. "This young man gave away all he possessed and renounced position and fame to seek after truth. He has endured incredible hardships, delved deeply into life but no matter what he does, it has availed him nothing and he has found no peace. He has just wished that his life and his future would end. He has, without a doubt, reached the lowest



ebb and the greatest depth of discouragement."

Just then, a figure began to materialize in the air, tall and austere, robed from head to foot. The figure seemed very tenuous but to the discouraged and heartsick Guatemala, he must have been completely invisible for he took no notice. A tiny ripple seemed to form in the air before the tall being, a visible thing with an interplay of colors, an ephemeral yet tangible thing which slowly drifted toward the man under the tree. It touched his forehead then disappeared. The tall, robed figure was gone in the same instant.

The eyes of the seated Guatemala flashed open and they held a light of recognition. He smiled broadly and clenched a fist before his breast. His lips formed words and although no sound came to those in the machine, they seemed to sense his thoughts.

"I see!" he exclaimed. "At last, I see." The clenched fist fell into the lap of the man and he bowed his head in concentration again but the smile remained. His whole body seemed electrified and radiated vital understanding.

Abruptly, all turned black outside the machine and the three looked at Simeon questioningly. He smiled and pointed to the other side, and immediately it became light.

Now they were beside a river where a wild-eyed man stood, exhorting the people who stood around him. His skin was almost burned black by the sun and his lean body was clad only in a leather girdle and a rough hair shirt. As they watched, a man came forward out of the group, fell on his knees and bowed his head. The tall, lean man with the fierce eyes, raised him to his feet and together they walked into the river up to their waists. The tall man turned to face the others then placing

both hands on the other man's shoulders, he looked upward to the sky, eyes closed, his lips forming words. The air about them shimmered then the tall man emerged the other beneath the water and drew him forward. An expression of sublime peace settled on the face of the man who had been emerged and he walked toward the shore, holding his hands heavenward in supplication.

Simeon's voice broke the silence. "This is John, son of Zacharias, he who baptised with water. You saw the tiny ripple of vital energy, but wait. Here comes another."

ANOTHER man walked through the crowd, his face showing the same utter discouragement and despair of Guatemala. The brows of John, son of Zacharias, knit in puzzlement as he looked at this figure. They conversed for a moment on the bank then turned and walked together into the river. As the water came higher on their bodies, the giant figure, robed from head to foot, appeared in the air again and before him formed the same coruscating ripple. The ripple drifted toward the two men as John, the son of Zacharias emerged the other. Then, as the face of the other man came out of the water, the ripple touched his forehead and in that instant, his countenance became suffused with comprehension. The hands of John jerked away from the man, as though he had received a shock. Wonderingly, the tall, sun-burned man followed the other to the bank, still staring at his hands. As the smaller man walked away through the crowd, John, the son of Zacharias, turned his face toward the sky, his brow still puzzled and apprehensive.

The scene faded to be replaced by another. The man who had been

baptised was now hanging limply from the arms of a wooden cross. He was bare except for a loin cloth and perspiration trickled across his heaving chest.

"You don't recognize the face?" Simeon asked. "I admit it isn't quite the way he is represented."

Walter turned again and stared at the heavily muscled man. "It can't be!" he breathed.

The figure on the cross stirred slightly and looked at the few who were gathered around the foot. The sky grew darker as the sun sank lower. The man on the cross looked at the sun, then to the right and left. Then his head fell forward limply and the great chest stopped heaving. The air around seemed to boil and roll like a storm cloud and when the turbulence stopped, the Nazarine stood in the air beside his body. The light from the sun dimmed and suddenly the ground shook with an earthquake. In the gathering gloom, the robed figure appeared but this time, the cowl was thrown back and his face was revealed. It was the face of the King of the World.

## CHAPTER XI

**T**HEN it really DID happen!" Mary said.

"Yes, it really happened," Simeon replied. "Now I shall show you something a bit different."

This time, they saw the interior of a theater, an old fashioned place, lighted by lamps. A play was in progress and something about the scene seemed familiar to Walter. The machine drifted nearer to one of the boxes wherein sat a tall, gaunt, bearded man, intensely watching the stage. Suddenly, deep lines of care and worry appeared on the man's face and he dropped his head forward in his hand.

His burden seemed too great to bear. Just then, Walter saw the familiar cowed figure hovering in the middle of the theater. He watched the rippled form but this time, he kept his eyes on the great figure until it disappeared.

Walter turned back to look at the man in the box and there, behind the relieved gaunt face, another figure hovered over the box. He was clothed in black, close fitting garments and his size was nearly that of the King of the World, but for some reason, Walter recoiled. The hand of the figure in black extended itself and as if in answer to a summons, a man appeared in the back of the box and slowly crept forward. The black figure seemed to smile as the man drew a revolver and aimed it. Walter saw the spurt of flame and the confusion begin. Then the scene faded.

"Who — who was that?" Walter gasped.

Simeon smiled. "The adversary, the enemy."

"Then—all of this," Ira stammered, "This—is to —"

"I understand your confusion," Simeon replied, "but it will become clear to you."

Again it began to lighten outside the machine. They saw a great city below them and verdant meadows and fields. The machine seemed to move at blurring speed across land and water, showing them many beautiful cities and a beautiful earth.

"This," said Simeon, "is the earth that was and is not. This is before history begins."

As Simeon spoke, a great figure appeared on the horizon. It was the figure dressed in black but now he had about his head a golden band and on the front, the intricate, geometrical device which the King of the World now wore. He seemed to stand in mid-

air looking upward and soon, a shimmering dot appeared high in the heavens. As it came toward the earth, it became a great, glowing sphere. The figure in black, held the palms of his hands together and a tiny, swirling dot appeared between them, swiftly growing into a ball of inky blackness. The huge sphere above disappeared to reveal a figure, greater than the man in black, seemingly descending invisible stairs. With a swift motion of his hands, the figure in black sent the inky ball whirling toward the newcomer. It exploded into a mirky, swirling darkness which engulfed the newcomer and when the darkness cleared, the newcomer was no more.

The scene faded to be replaced by another. This time, the figure in black stood terrified, watching a great ball of light descending toward him. The ball of light vanished suddenly and in its place stood a tremendous figure, neither man nor beast, too titanic to be imagined. With this tremendous figure, was the King of the World. A pall of darkness settled over the scene and the sky flashed with lightening. In the gloom, Walter saw the man in black remove the golden band from his head and it was caught up in the air and swiftly placed on the brow of the King. Lightening flashed jaggedly across the scene and the figure in black turned away, walking slowly and dejectedly.

THE murky darkness deepened, the flashes of lightening increased. Then as suddenly as it had come, the murk and the turmoil vanished and all below was desolate. The fields were seared and burned, the cities had crumbled and fallen and as far as the eye could see, all was laid waste. The King of the World stood in the center, his head bowed, his face sad.

From the ruins of one of the build-

ings, a man crept. As Walter watched, his face became covered with hair, his forehead receded and his whole body became monkey-like. The creature scrambled on, the spark of intelligence lost from his eyes.

"Adam," Simeon intoned. "Both the last and the first of his race."

The machine followed the shuffling figure across seared fields and burned meadows. The scene vanished and another came into view. Walter was startled this time to hear sounds. He heard the sighing of the wind and the rustle of leaves. They were in a forest and hunched at the foot of a tree was Adam, the last and the first. As he sat there, the figure of the King of the World appeared and the familiar ripple formed in the air, drifted toward the hunched man and touched his forehead. A dawning light of comprehension came into the creature's eyes and he looked up. The King shrank rapidly in size and Adam seemed to see him.

"You are Adam," the King said, "and this is your home." The King gestured with his hand to the forest and in the twinkling of an eye, they were in a valley. Flowers and fruit trees abounded and birds sang everywhere. Adam turned his head wonderingly.

"This I shall call after the planet of my birth," the King said. "It shall be E-den."

"E-den," Adam repeated.

It grew dark outside the machine and Walter turned to speak, but before the words came out, it became light again and a great battle was in progress between primitively armed men. There was a sudden flash, before their eyes, and they saw that the battle was over and the living were being chained. They were herded behind chariots and a crew of visaged men lashed them with heavy whips to keep them moving.

Gradually the long procession trailed out of sight. The scene shifted many times to show the long column going onward through country becoming ever more impassable. Great columns of men, women and children, were being herded like cattle. The whips were used often and the bowmen stood ever ready to let go their arrows at the slightest sound of rebellion, and always, hovering over every scene was the figure in black.

Soon the captives were no longer captives, yet still, they who had once been slaves pressed northward and eastward. Walter saw cities being built and a culture was founded. He saw scenes of the poor ragged men and women in the snowy streets and watched as the cities became more and more full of people.

"These are the children of Israel," Simeon explained. "They have spread northward and eastward and have made a mighty nation. But even so, they still feel the prick of captivity."

As Simeon spoke, from the far end of a street, horsemen galloped, waving thonged whips over their heads. They lashed viciously at all who were in their way and cut down some with their heavy sabors. The street became deserted except for the dead who were left lying, and the figure in black who hovered over it.

There was another flash and though they were looking at the same street, there was something different about it. It was filled with people, moving aimlessly, it seemed. Then suddenly, they began to line up on the sides of the street, waving cloths and bandanas. A car rolled slowly between them and in the back sat a sharp featured, dark, man waving to them as he passed. Behind him came other cars from which waved large, red flags and on each flag was a crossed hammer and sickle.

"Oh NO!" Ira exploded.

"Yes," Simeon said gently. "The lost tribes of Israel."

AGAIN they saw the flash and this time, the street was modern. There were telegraph poles, electric lights and new buildings, the only thing incongruous being the fact that the street was deserted. Above the scene, stood the figure in black, his arms outstretched. The machine moved back until they could see the whole city and then, out of the air, an object whistled downward toward the city and a tremendous blast of light shot outward and a huge mushroom of smoke ascended miles in the air.

"And still they find no peace," Simeon murmured.

As they watched, the sky about the horizon flared with a bright luminescence as an almost unceasing bombardment began.

Ira's face twisted into a grimace. "It mustn't happen!" he said through clenched teeth.

"How can you stop it?" Simeon asked. "They are the most hated and feared of all peoples."

Swift changes showed them the terrible desolation. The maimed, the burned, the dying, were only outnumbered by the dead. Soon, more dead were piled in the streets, the unburned, unmaimed dead, products of disease and starvation. Only a pitiful remnant remained of the once great nation.

"Shortly, the rest of the world will be like this," Simeon said. "This is only the beginning."

"It must be stopped!" Ira exclaimed.

Blackness enveloped the machine and Simeon turned his face away. A moment later, they were back in the huge domed room.

"It must be stopped!" Ira exclaimed.

"It is not of my choosing," Simeon

replied. "How can one stop fear, and hatred, and worst of all, suspicion? If you can teach men how not to be swayed by other men, if you can teach man to think for himself, to judge himself correctly, if you can teach man not to be afraid, either of himself or others or the things about him or the things he cannot see, then you will have accomplished what not even the masters have been able to do."

The three, weak and shaken from what they had seen, stepped out of the machine.

"But it all seems to senseless!" Walter replied. "All these years, these millions of years, building up, only to be destroyed."

The figure of the King of the World became visible before them and the three stared at him.

"I have shown them," Simeon said simply.

"Thank you," the King replied.

"Are you a God or something?" Mary asked abruptly.

The King smiled. "No, not exactly. I am only the Lord of the World. I help men, whenever and wherever possible without interfering or influencing. I give guidance, inspiration, and understanding, but I am not a God. I was born a man many thousands of years ago."

"Then — then — there isn't any God?"

AGAIN the King smiled. "I believe there is. You see, my world was created once. Perhaps it was only another person such as I, who created it, but someone created him. I know there is someone much wiser and greater than I am who guides me and teaches me and I don't doubt but there is a wiser and more vast being still, who guides and teaches him. And on the chain goes, until it becomes too vast

and incomprehensible. Yes, I believe in God, as you call him, probably more strongly even than you."

"Oh," Mary said softly. Then she added, "is this where we come when we die?"

"A few come here," the King replied. "My world is much larger than you can imagine and so it is hard to explain these things to you. There are always those who join the adversary."

"Then — he's the devil?" Walter asked.

"He is the origin of the legend," the King said. In reality, he is the first King of the World who caused all the trouble and bloodshed you saw."

"Well if he's the cause of the trouble in the world," Ira interrupted, "why don't you destroy him?"

The King smiled. "There are so many things you do not understand. I am not allowed to harm him. He is destructive, true, but the time may come when he will change. He can only destroy life if man wishes him to. Actually he can't destroy anything without the co-operation of man. If he should ever become totally destructive, he would destroy himself."

"But can't he be stopped?" Ira insisted. "We've spent all our lives trying to prevent wars and now everything we've done is going to pieces!"

"Your Agharti," the King replied, "is an island, separate from the rest of the earth. In it, you have everything that would help to restore the earth. It is much better that the destroyers be allowed to destroy themselves and that you and the others preserve the things that the world will need to rebuild itself."

"But who will be left to do the building?" Ira exclaimed.

"There will be quite a few good, constructive people saved," the King replied. "I promise you they will build

a far, far better world than this one and I promise too that at last the meek WILL inherit the earth and there will be no more tears and no more suffering."

"I wish there were a way of doing it without all that destruction," Mary sighed.

"If there were a way, it would be done that way," the King said. "You will understand better later on and then you will change your point of view."

"Is there really anymore to learn?" Ira asked.

The King looked at him. "Through-out all eternity you will find things to see and things to learn, Mr. Travers. This is but the smallest of starts."

"Do you mean after I die?" Ira asked.

The King smiled. "You are already dead, Mr. Travers."

**W**ITHOUT waiting for an answer, the King gestured with his hand and a soom appeared. It was an ordinary living room with a fire crackling cheerfully in the fireplace.

"I sure like the way you do things," Ira murmured. "No fuss, no muss, no bother."

"It IS a nice illusion," Watler added.

"In a way it is," the King answered. "It is more real, however than the world you just left."

"Yes," Ira commented. "What did you mean by saying that I was already dead?"

"Just that," the King replied. "As far as the world is concerned, you are dead. Your bodies are in the room where you had your breakfast. From my point of view, however, you are more alive than you were. Actually it will be necessary to take life force away from you in order to return you to your former state."

Ira frowned.

"Won't you sit down?" the King offered.

Still frowning, Ira sat in the indicated chair and the others settled themselves before the fire.

"You have seen a good deal," the King began, "and now I shall try to make it clear. As you can see, this place is not the immaterial place that you might expect. What you see here is an outpost of a vast galactic civilization. Neither is it what you can expect to find near the heart of our civilization. Your world, someday will become one of the members of this civilization. On it are remnants of races from several planets. In order to comprehend the real state of things, you must remember that your terms, matter and energy are meaningless and what you call science, is based on ephemora and illusion."

"This is reality," the King said, waving his hand, "because I wish it so. The terms real and unreal are only states of mind. When you first arrive here, you find that some of the citizens are so tenuous that they cannot be perceived while you yourself are apparently solid. Later when you develop, you find that there are no such things as different shapes or tangibles and intangible beings. All are citizens. With your own eyes you saw your friend Vana Shanu become unreal. From his point of view, it was you who became unreal."

"But Vana is just like us!" Ira objected.

"Not quite," the King replied, smiling. "Vana has progressed much further than you have."

"Then we can't do whatever he did?" Mary asked.

"Not yet. Even though you can't see them you have teachers who will help you to learn many things. Names have

no meaning here so I can't introduce you but they are always with you and if you try, you can converse with them telepathetically."

Ira laughed. "So I HAVE got a guardian angel!"

"And lucky for you," the King replied, "or you would have killed yourself before you accomplished your work."

"Work?" Ira repeated.

"We all have work to do. We always help those who are unselfish and try to help others. If everyone would do his share, the world would be far different than it is."

"Well what am I supposed to do?" Ira asked.

"Whatever you wish," the King replied. "You can assist in the task of bringing this planet into full citizenship, or you may not, as you see fit."

"I would like to help," Mary said, "but what can I do?"

"It will become apparent to you as you go on," the King replied.

"Wherever Mary goes, I go too," Walter said.

"You are not required to go anywhere or do anything," the King said. "Just do what you want to do and if your motives are right, only good will result."

**I** GUESS I might as well get in on this too," Ira said, smiling, "but before we digress too much, would you mind telling me what all of this is about?"

"Just what isn't clear to you, Mr. Travers?"

"Well—I—guess it's just what one would call the overall picture."

"Well, to put it in as few words as possible, when the first civilization on the earth fell, as it were, the harmful rays and by products of the destruction, caused the physical man to retro-

gress to a semi-animal state. It was better that he start anew rather than try to repair the damage caused by the first King of the World."

"But what sort of damage did he cause?" Mary asked.

"That's a little hard to answer since there are many things you don't understand, as yet. Let me put it this way, there are two forces that work and are used in your world. Let's call them anabolism and catabolism. One is the building up or constructive force and the other is the breaking down or destructive force. One tends toward its beginning or retrogression and the other toward higher development or progression.

"Under the guidance of the first King, the world built a tremendous science based on the utilization of these two forces. The first King, however, had implanted the idea that catabolic or destructive force was the greatest and fostered it in the minds of a selected group. He planned to use their highly skilled ones as a core of his own empire. It was because of this that he destroyed another citizen who had come to see how he was progressing.

"Later, I was empowered by the High One whom you saw, and the first King was allowed to go free. We do not take life. Until this day, he has tried to enslave the world in every way conceivable. He is an ultimate fascist at heart and if he should ever get a good foothold on the earth, he could use it as a springboard to enslave our whole civilization, if that were possible. His followers, and there are many, are nothing but tools who do his bidding. They are taught to be destructive, to use destructive force and if they are not restrained in any way, eventually destroy themselves."

"Not men?" Mary asked timidly.

"That's as good a term as any," the

King replied. "They are nothing but walking dead bodies, tools of a mighty intellect who uses them to further his own ends."

to combat the influence of destruction

"One of the best ways we have found has been to implant the idea that there is such a division as 'good' and 'evil', constructive and destructive, progression and retrogression. There are those who believe that to progress, one must become totally constructive and since this path is logical, they set out to destroy the evil in themselves. To put it plainly, they try to destroy destruction which cannot be done. Neither can they build construction. Relatively speaking, good and evil are not different things but facets of one and the same thing."

"Are you trying to say that good and evil are the same thing?" Ira exploded.

"I'm trying to say that there is no such thing as good and evil. In order to make a statue, let us say, you must first destroy or cut away that which you do not need. In order to repair a watch, you must take it apart. The retrogressive action must come before the progressive action. When a man stras to repair a watch, does he say 'first I am going to edstroy this watch then I shall build the watch?'"

"Of course not!" Mary retorted.

"But he's not smashing the watch. He's merely disassembling it."

"THERE you have the entire situation," the King replied. "Moderation or the correct amount of applied force of any type is the proper way. Those who go around smashing watches into their component atoms just because they like to smash watches, are destructive. Those who do the same before trying to repair them are making an incredibly hard job for themselves. And those who think

themselves constructive, won't take the watch apart at all but attempt to fix it as it stands. All of these are following the path of excess. Moderation is truly the key. The judicious use of anything is proper but even this is true only the major part of the time. No truth is absoulte nor is any rule fixed except in a general way."

"Then what are we supposed to do?"

Walter asked. "Are we supposed to be predominately constructive or destructive?"

"Let me ask you a question," the King replied. "Is your universe expanding or contracting? Is it growing larger or smaller?"

"It's expanding," Walter replied, "at least that's what the astronomers tell us."

"How about the body of a child? Does it grow larger or smaller?"

"It grows larger," Walter admitted. "How does it do this?"

"Well—the body cells divide and grow. Then divide again and grow some more." Walter hesitated but the King waited patiently for him to continue. "As—I remember," Walter said slowly, "some of the body cells die and are replaced by others. At least that's what I remember."

"Do more cells die than come into being?" the King asked.

"Why—no. It's just the reverse," Walter answered. "More come into being than die, at least while the body grows."

"There is your answer then. You must see that your actions are constructive from the long point of view. Whatever you take away, you replace with something better."

"But — but — how can you do that?" Mary asked.

"You must begin with yourself. You must endeavor to remove whatever holds you back and replace it with



something that helps. Your teachers will guide you and help you to understand these things."

The room was silent for a moment.

"Now for the sixty dollar question,"

Ira said. "What do we do after we have turned ourselves into supermen?"

"By that time, you will know," the King replied, smiling. "However, I can tell you briefly what you probably will do. When the war comes, you will watch and wait. Then, when there is peace again, you will act." The King forestalled Ira's objection by raising a hand. "Remember now, your point of view will have changed. You forget that physical life is not all there is and it's far more important that a man learn and develop even though he dies physically so doing. Later, when the storm clouds have blown away and science, art and knowledge have been lost to the world, you will replace the things that were, with the true science from your Agharti. Essentially, your job is to replace the worn out with the new."

"I don't see why it can't be done without the necessity of war!" Ira objected.

"We are not starting the war!" the King reminded him.

"You aren't stopping it either!" Ira protested.

"**H**OW could we? If man chooses to remain at peace, we certainly will not object and if he follows the path of blood, it is his choice to make. Either way, it will work toward his eventual betterment."

"Then this IS the last war?"

"It is."

"What happens after the war?"

"Then you and your friends will reveal yourselves and you will be received for what you are. If you tried to do it today, you would be laughed

at."

"Well——," Ira sighed, "we're going to have to make some changes in policy aren't we?"

"I don't see why you should," the King replied, smiling. "It's far more preferable that you go on as you have in the past. You have endeavored to keep the legend of Agharti alive by playing a part. Occasionally you have sent representatives to different governments who purported to be agents of the King of the World. This has been a good thing for without your knowing it, that's exactly what they were. Who do you think built Agharti? Who put the machines there and means whereby you could learn to use them? Who guided the right people to the city? Who has helped you right and left in everything you've tried to do?"

Ira's eyes opened wide, a light of comprehension spreading over his face.

"But what about us?" Walter asked. "We are not of Agharti."

The King smiled. There is an old saying, 'many are called but few are chosen.' You two have a job to do which no one else can do. It is not something special in the true sense but something you would have done anyway. We are only going to give you every assistance we can to make sure it is the success that it promises to be."

"But—but what is it?" Mary asked, dumbfounded.

"You will know when the time comes. For the present, it is enough that you seek to develop yourselves."

There was a long silence, then Ira said suddenly, "where is Joe?"

"He will be here soon to see you off," the King answered.

"You mean—he isn't coming with us?" Mary asked.

"He's a very old man and he's worked very hard. Don't you think he deserves a rest?"

Ira's brows knit slightly. "Things won't seem the same without Joe," he said softly.

"I guarantee he won't be far away. When you have progressed a little further, you will be able to see him."

"What about Vana?" Ira asked.

"He has other work to do. From now on, you Ira, will be my representative to Agharti. It will be up to you to carry on the work."

Just then, the door of the room opened and Joe and Vana entered, smiling. Ira looked at them, almost enviously.

"Well, my children," Joe said. "This has been quite an experience, hasn't it?"

"We'll miss you Joe," Mary said quietly.

"I know, my dear," Joe said, still smiling, "but it won't be for long. Friends really never part, you know."

Walter stirred and arose. "Joe, I—I want you to know I appreciate all you've done for us. I—I—find it hard to——"

"I know, my son," Joe replied softly. "And I want you to know that I appreciate all you have done for me. You have been a good friend."

**T**HEY shook hands in silence. Then Joe turned to Ira. "Well, my dear Ira, it looks as though you are going to have to lead an honest life from now on. Be sure and keep the home fires burning."

Ira sighed. "That's a hard thing to do, Joe, I realize now that it's useless to prevent the war but——well——how can I convince the others?"

Joe frowned. "It won't be necessary now. You see, the first bomb fell a few minutes ago and the war has begun. Vana and I saw it happen."

Ira's head dropped forward. Even though he knew it had to happen, it

was still a shock to him. "Well——that's that," he murmured.

"I'm afraid that Vana and I must say goodbye to you now, my children," Joe said. "Do the best you can in the trying days ahead and remember I shall always be with you."

"Goodbye," Ira said, simply, "and Vana. Take good care of this old wind bag or he'll bore everyone to death!"

Vana smiled. "Don't worry, Ira. I'll stuff a sock in his mouth if necessary."

The King of the World stepped to the center of the room and extended his hand. Everything about them seemed to dissolve into a formless mist which swirled and eddied. Gradually the mist cleared and they found themselves seated about the breakfast table just as they had been before the King entered the room. All, that is, except for an empty cushion where Vana had been sitting and the body of Joe, quite lifeless and dead, half reclining on the table. The three of them stared at the empty cushion. Then at the body of Joe. Suddenly, Mary began to cry. Walter looked helplessly about him, confused. Ira took a cigarette out of his pocket and lit it. His hand shook so that he had some difficulty. Finally he straightened and tried to smile.

"Well," he said brightening. "It looks as though Vana really WAS an agent of the King of the World."

Walter and Mary nodded in assent.

The three looked again at the body of Joe. "I'm already beginning to miss the old goat," Ira sighed.

"It——it——all really did happen?" Mary asked.

"I——guess it did," Ira answered, softly.

The three sat silently for several minutes. Then Ira arose. Just then, a door appeared in a wall and a man hurried into the room. "We've received word," he said breathlessly. "We just

———" He broke off, staring at the body of Joe.

Ira nodded as though answering an unspoken question.

"It's just as well," the man said. "I'm glad he didn't live to see this."

"See what?" Walter asked.

"Everything we've worked for is lost," the man murmured. "We've just received word that the war has begun. The first bomb was dropped five minutes ago."

Ira smiled. "Don't be a pessimist, Henry. We haven't lost anything. We're just getting ready to go to work."

"You mean there's still hope?"

Henry asked, incredulously.

"You have no idea just how much hope there is," Ira chuckled, "but let's not waste time. How's the voice cir-

cuit working? I have something to say to everyone."

The man looked at Ira wonderingly. "I didn't think you would take it this way," he said, puzzled. "Aren't you even sad about Joe? On second thought, there's something different about you. What's happened."

Ira straightened his shoulders. "No, I'm not sad about Joe. I miss him, yes, but I've got work to do." He turned to Walter and Mary. "I think you should stay here. Now that the war has started, no place but Agharti is really safe."

Walter and Mary nodded.

"Now Henry," Ira said brightly. "Let's go talk to the citizens. We've got to tell them that——well——that Agharti really DOES exist!"

## THE NEW TELESCOPE

By Frances Yerxa

THE new telescope on Mt. Palomar may soon be able to bring new evidence of inhabitants on other planets. This giant telescope is the largest ever made, having a 200 inch reflector. With the 100 inch telescope of the Mt. Wilson observatory, astronomers have learned that there are 100,000,000 galaxies within its range. In each galaxy there are billions of stars. The new giant telescope is expected to reach out into a ten times larger volume of space containing more than a billion galaxies. It may also be able to settle the question of whether there is life on Mars. It was thirty years ago that Dr. Percival Lowell stated that he had seen artificially constructed canals on that planet. He believed that even though the planet was dry, there might be a race of super-intelligent Martians whose engineers had constructed an irrigation system to maintain plant life. Just recently, carbon dioxide gas was found to be present in the atmosphere surrounding Mars. This gas is among the most essential chemicals of which all known organisms are composed. But even though there may not be life on the other planets in our own solar system, it seems reasonable that there may be races more intelligent than mankind, living on planets in other galaxies which number into the millions.

A recent British astronomer calculated that if

only one star in 500 million had planets surrounding it, there would be at least two million-million planetary systems with worlds supporting life. There are as many stars as there are grains of sand in the Sahara.

The new giant telescope is expected to tell us if the universe is limited like a sphere, or if it goes on infinitely with never ending galaxies. The telescope will receive light rays that have been traveling for the last two billion years, at the speed of six million-million miles each year. These rays are kindled in the same kind of atoms as the earth and the other near-by heavenly bodies are made from, atoms whose energy keeps the stars shining as our sun blazes. Scientists may form new laws of nature after studying these light rays.

It seems that every age brings forth a new astronomical discovery that is of great benefit to civilization. Newton and Galileo, by their celestial studies, laid the foundation for modern navigation. Then helium was discovered in the sun, and now scientists are able to learn more about atomic energy through their study of the stars.

The new telescope is expected to increase our knowledge of the wonders of nature, and also to enlighten us in a spiritual sense by bringing the outer worlds closer to us.

# Mystery of the Midgets

by A. K. Jarvis

**A sideshow was the natural place for midgets, but these midgets were signaling for help . . . were they really in prison?**



**“W**HAT'RE you looking at?” Startled at the harsh voice grating in his ear, John Halcon dropped the amazing cat's eye agate on the crude dressing table in front of him and rose to his feet.

Looking at him at this moment, no one would have believed that Halcon was one of the outstanding physicists in the United States, that if he chose he could put a dozen honorary degrees

after his name, that he was one of the three American scientists who had been in on the development of the atomic bomb from the very beginning. If he was not known to the general public, it was because he preferred to remain anonymous. The scientists knew him. The men who counted knew him. That was enough.

Yet at the moment when Ed Silver, paymaster, part owner, and general



slave driver for the outfit that called itself the Great Zenith Circus, demanded to know what he was looking at, John Halcon was sitting at a crude dressing table in a small tent behind the main arena of a circus. He was dressed as a clown!

The yard-long shoes, the baggy trousers with one green and one red leg, the plaid shirt, the elastic suspenders, the false face painted white, the wig made to represent the baldest of all bald heads on earth, he was wearing all of these things. He had, moreover, just come out of the big tent where he had spent a gloriously happy two hours falling over his feet, tripping over buckets, losing his hat and putting on an exaggerated search for it, doing all the things a circus clown does.

Once, maybe twice a year if he had the chance, John Halcon slipped away to the circus. He paid twenty-five dollars for the privilege of spending two hours doing the silly senseless caperings of a clown working under the big top. During those two hours he forgot every problem that vexed him, every care that worried him, every nagging worry that haunted him. He forgot everything and had himself a hell of a good time. When he removed his clown make-up and slipped unobtrusively away, he was a new man.

Playing clown was John Halcon's way of relaxing. He had no illusions about the people who made up the circus. He knew that many of them were grafters, some of them plain thieves, that almost all of them were only too ready to take every advantage of a sucker. He knew the circus world was harsh, hard, and brutal. He didn't care. He loved the circus and everything in it, from the high wire act up near the top of the main tent down to the freaks in the sideshows.

The Zenith Shows were advertising

one sideshow that Halcon intended to see: a troupe of extraordinary midgets. He had picked up a cat's eye agate on the ground behind the main tent. He did not know how the agate had gotten to the spot where he had found it but he did know it was the most amazing stone he had ever seen.

Inside the agate was a tiny black rectangle that looked like a microscopic motion picture screen except it was black instead of white, as black as midnight, as black as the inside of a chunk of coal.

On that tiny black screen moving microscopic lights spelled out these words:

*Help the Midgets*

Then the lights winked out and a second line appeared on the amazing black screen:

*The Midgets Need Help*

Alternately the two sentences appeared, flashing on and off on the little black screen in an unending but microscopic appeal for help. A trapped gnome, a captured elf, might send out such an appeal. But how would even a trapped gnome manage to put his call for help into a stone no larger than a grape?

Halcon, startled, dropped the agate on the table when Silver spoke to him. The circus manager's eyes darted toward it.

"Let me see that," he demanded.

IF HE had courteously asked for the stone, Halcon would have gladly given it to him. It had been found on the circus lot and Silver might know something about it. But Silver wasn't courteous. He wasn't even polite. He grabbed for the agate.

Halcon's fingers closed over his wrist. "Just a minute," Halcon said.

Silver tried to jerk his wrist free. Halcon tightened his grip. There was

amazing strength in those long wiry fingers.

Silver made his second mistake. The resistance infuriated him. Few performers around the circus dared to oppose his wishes. No amateur clowns were included on that list. All he knew about Halcon was that the tall man was a rube who was big enough fool to pay good money to dress up as a clown. Clowns of the Great Zenith Shows jumped when the paymaster, part owner, and general slave driver, barked. The fact that this clown didn't jump enraged Silver.

"Why, damn you!" he gasped. He smashed at the clown's face with his free hand.

Halcon moved his head three inches to the side. The fist went over his shoulder. Still grasping Silver's wrist, he shoved up and out, at the same time slipping a toe behind the circus man's heels.

The general manager of the Great Zenith Shows landed on his butt in the sawdust.

"If you see something you want, ask for it," Halcon advised him. "Don't grab."

Ed Silver had a long narrow jaw, pinched cheek bones, and yellow eyes. The long jaw made him look like one of his ancestors had been a horse, the pinched cheek bones gave the impression that one of his parents had been a baboon. The yellow eyes were pure wolf. The combination of parentages, resulting in an offspring that could kick, howl, and bite, was bad medicine.

Silver didn't stop to think. He tried to bite. One hand dived inside the fancy sport coat he was wearing.

John Halcon didn't have to be told that was either a knife or a gun, under that coat. He didn't wait to think either. When Silver's hand went under his coat, he stepped forward. Silver

was still sitting in the sawdust. With the heel of his foot, the scientist kicked Silver in the chin.

Silver's head snapped backward like it was on a hinge. The half-drawn gun slipped from his fingers, hit the sawdust. Halcon picked it up. It was a derringer, with twin barrels.

Spitting sawdust, Silver scrambled to his feet. He was all wolf now.

"Get off the lot!" he ordered.

"Certainly," Halcon agreed. "As soon as I do two things."

"What two things?"

"Change clothes and see the midgets."

"As soon as you—*what?* What's that you're going to do?"

Surprising change had taken place in Silver's face. He had been white with anger, his eyes blazing with yellow sparks. When Halcon mentioned the midgets all anger faded from his face. Fear and ruthless cunning replaced it.

**H**ALCON saw the change and knew what it meant. Silver had been dangerous before, dangerous in a loud, threatening sort of way. The loud-mouthed threats were gone. Silver was the silent wolf now, the wolf that strikes without warning, silently, treacherously.

Halcon had mentioned the midgets. This single word had brought about the change in Silver.

"Yes," the scientist said, "I want to see the midgets. You see, a while ago I found this most amazing agate—"

He pointed to the agate on his dressing table.

"That's what I thought it was!" Silver snapped.

"—It has something inside it that looks like a tiny motion picture screen with the words 'Help the Midgets' flashing on and off," the scientist con-

tinued.

"An advertising stunt," Silver stated.

"An amazingly effective one," Halcon commented.

"Every town we play, we scatter those things around," Silver said. He was all bland cunning now. "They're just for suckers. Of course, if you found one of them and fell for the bait—" He shrugged, a gesture that conveyed utter contempt for anyone who was big enough sucker to fall for as childish a device.

"Ah."

"Of course you can see 'em if you want to. We'll take your money." The shrug was repeated.

"I imagined you would," Halcon said drily. "Those midgets are making a lot of money for you, aren't they?"

"Oh, they're doing all right. The suckers fall for that kind of stuff—"

"That's fine," Halcon commented. "Because I'm a sucker."

Silver hesitated over some course of action he was turning over in his mind. "So you're determined to see the midgets?" he said at last.

"I wouldn't miss them for the world," Halcon answered.

"Okay," Silver replied. He turned and walked out of the dressing tent.

Halcon watched him go. He bent over, picked up Silver's pistol from the sawdust, turned it in his fingers, slipped it into his pocket. Two thoughts were in his mind. The first thought concerned itself with the midgets. What was there about them that Silver was so anxious to conceal? And that amazing agate? Where had that come from? Nothing so intricate as that stone had ever been produced as an advertising stunt. The workmanship was beyond the ability of any artisan Halcon had ever known and it involved scientific principles that left him guessing. What was hidden behind the stone, behind

the so simply but so pathetically worded appeal for help that continuously flashed off and on?

The second thought in Halcon's mind concerned itself with Silver: What would that cunning wolf do next?

He didn't have long to wait for the answer to the second question. Silver strode out of the tent. A second later Halcon heard him yelling outside.

"Hey, Rube!" Silver was yelling. "Hey, Rube!"

Halcon did not have to be familiar with the world of the circus to know the meaning of that yell. It was the rallying cry of the workers under the big top, the call they used when they wished to give some obstinate outsider the bum's rush. It was the wolf call of the circus world.

"Hey, Rube!"

The answer to Silver's yell came instantly, came with the sound of running feet.

"The clown in that tent," Halcon heard Silver order. "Get him out of there and run him over the hill!"

The tent flaps were thrust aside. Silver entered first. Behind him came a motley collection of stake-drivers, roustabouts, and circus hangers-on.

"That's him!" said Silver, pointing to Halcon.

## CHAPTER II

"HE AIN'T a real clown," Silver explained. "He's a Rube. Run him over the hill. And if a couple of his legs get busted, why I ain't gonna do any cryin'."

A roustabout with a tent stake grasped in brawny, dirty hands stepped forward. You could see he was going to enjoy this. Behind him came a skinny little runt who was carrying a baseball bat. He was going to enjoy this too.



Halcon looked at them. He could see they meant business. Standing with his hands at his sides, he made no effort to escape. When the roustabout was five feet from him, he raised his right hand. The derringer he had knocked out of Silver's grasp was in it.

"I'll kill the first two men who touch me," he said quietly.

The roustabout hastily backed up. "You never told me he had a gun," he snapped at Silver.

"What difference does a gun make?" the manager raged. "Go get him. He's only bluffin'. He won't dare shoot."

"I feel sorry for the man who thinks I'm only bluffing," Halcon said. He reached down, picked up the brown Gladstone bag from under the dressing table. "Now I'm going out of here. Stand aside. The man who tries to stop me or the man who follows me is going to find himself with holes in his guts."

Under the pressure of the pistol, they stood aside. Silver didn't like it, he didn't like it a little bit, but that was his gun and he knew what it could do. He stood aside. John Halcon walked out of the tent. When he got outside, he didn't run, but by the time he was off the lot, he was walking mighty fast. So far as he could tell, he hadn't been followed.

"You old fool," he sighed in relief. "You lucky old fool! Those monkeys meant business. Now get to hell away from this blasted circus and stay away."

Clearing out of the neighborhood of the lot where the circus was showing would have been good common sense and Halcon knew it. Scientists are always boasting that science is nothing but the application of good common sense to a problem or a situation and Halcon knew this too. Half an hour later, after changing clothes in a service station, a tall, well-dressed, quiet

man with his hat pulled down over his eyes, bought a ticket to the sideshow that exhibited what the Zenith Shows claimed was the greatest collection of midgets on earth.

When he got inside the tent Halcon instantly realized that for once the Zenith Shows was not overselling an exhibit. When he paid a buck and a half for his ticket, and saw the crowds thronging into the tent, he discovered one reason why Silver might not want anyone too interested in this sideshow. The midgets were a gold mine. The show was playing to capacity at every performance. The midgets were bringing dollars into the money box of the Zenith Shows almost faster than they could be counted.

Ed Silver, who loved a dollar only a little less than he loved his right arm, had been protecting this sideshow when he ran Halcon off the lot. Which meant, of course, that there was something to protect, and this in turn meant there was something exceedingly rotten somewhere.

The midgets were on display on a large stage at the front of the tent. Ropes stretched between stakes driven into the ground guided the crowd from the entrance, past the stage, and on to the exit. Circus workers kept the customers moving. Ten, maybe fifteen minutes if you were lucky, was all the time you got in this sideshow. After that, you somehow found yourself going out the exit. If you wanted to see more, you could spend another buck and a half. Many people, wanted to see more.

**H**ALCON was unobtrusive. He kept with the crowd. A little by a little he edged closer and closer to the stage. He saw the midgets. And gasped in astonishment.

In that moment he forgot Ed Silver

and his roustabouts, he forgot what was likely to happen to him if he was caught here, he forgot everything except the amazing display in front of his eyes.

He had seen midgets before, plenty of them, little men, little women four feet tall, maybe three feet tall. They were human beings with something wrong with the glands that control growth. Midgets just didn't grow tall. Malfunctioning glands made little people out of them.

The midgets in this sideshow were not four feet, not even three feet tall. They stood not over eighteen inches high! They were perfectly proportioned, perfectly developed little people, with long lithe muscles, clean slender limbs, and clear brown skins. There were nine of them. If you could take nine young athletes, nine perfect physical specimens, young, healthy, clean-cut and superbly trained, and shrink them until they were only eighteen inches high, you could duplicate the nine midgets in the sideshow of the Zenith Circus.

"Captured at great risk of life in the wilds of Central Africa—" Halcon heard the barker begin—"you see here before you tonight the greatest scientific curiosity of the century. Here on this stage are nine living midgets, the tallest one of which is by actual measurement exactly eighteen and one quarter inches tall. Ladies and gentlemen, the greatest scientists on earth have examined these little people. They profess themselves completely baffled by them. Nothing like them is known in the annals of science, nothing like the scene you see before you is recorded on the scroll of written history. Look at them closely, ladies and gentlemen, watch them as they work, follow them as they play their little games, listen to them as they sing their little songs, and ask yourself if you are not witnessing the greatest spectacle ever beheld by

human eyes. Step close, ladies and gentlemen, but don't crowd—"

"The greatest spectacle ever beheld by human eyes!" For once in his life Halcon was in complete agreement with a sideshow barker.

A native village of little thatched huts was displayed on the stage. There was a cooking hut and three sleeping huts, all with glass fronts that revealed the activities of the little people who lived in them. There was a long hut equipped as a gymnasium. Off to one side was a small forge which included a tiny charcoal fire, a bellows, and an anvil. One of the midgets was working at the forge. Holding a small hammer in a brawny right hand, he was pounding away at a tiny chunk of iron that he held on the anvil with a set of tongs. The ringing clang of the hammer on the anvil was clear and sweet in the crowded tent. Two of the midgets, exercising in the gymnasium, were going through a series of maneuvers on the crude equipment that would have done credit to skilled performers. Their bodies had the lithe freedom of perfect muscular control. Four of the little people were seated on the floor in front of one of the tents, singing. Staring raptly at the scene, the crowd had almost stopped breathing. Halcon caught flashes of the song.

*"—Be it ever so humble—"*

They were singing Home, Sweet Home in English!

There was sadness beyond the telling in the way they sang the song. The Israelites, held captive in Babylon, might have sung as these little people sang. Certainly the slaves in the old South sang this way, expressing their longing for freedom, for a home somewhere far away, in the slow sad refrains of harmony. In the thick air of this sideshow tent, the soft strains of Home, Sweet Home whispered a story of capture, of misery, and of suffering that

was heartbreaking in its sadness.

WHERE had they learned to sing? Who had taught them Home, Sweet Home? Who had taught that brawny smith how to heat the iron in the fire, how to shape it on the anvil? Who had taught those two midgets swinging on the bars the intricate arts of the gymnasium? Who— The song ended.

For a second the crowd held its breath. Then a ten-year-old boy squealed.

"Mommy! Buy me one of those little men, Mommy. Mommy—"

"Hush, dear."

"Mommy—"

Other voices were speaking.

"Ain't they grand?"

"Did you ever see anything like that in your life?"

"I'm amazed, absolutely amazed."

"Geeminy whiz! Where did they find those little men anyhow?"

"Singin' Home Sweet Home, they was!"

Halcon heard the muted voices of the crowd expressing amazement, incredulity, surprise. All the questions they were asking he had already asked himself. Nine little midgets in a sideshow! Nine of the most amazing little men he had ever seen or ever expected to see. Nine questions to tangle the brains of the smartest scientists alive. Nine little captives, nine little prisoners, nine little men singing a sad little song trying to tell the giants who peered through the wire netting at them how much they wanted to go home.

Home? Where was home? Taken in the wilds of darkest Africa, the barker had said. Well, the barker might be telling the truth, but nothing like these little men had ever come out of Africa before. Pygmies came from Africa but the pygmies were four feet tall, dull,

brutish savages. The little men in this cage were not dull. The things they could do, the look on their faces, showed keen intelligence. They were not pygmies. They were not members of any race known to modern science.

"Move right along, ladies and gentlemen, move right along," the barker began. "Look at them as much as you want but remember there are other people waiting to see this scientific marvel. Don't be selfish, don't keep others from viewing this remarkable exhibit. The next performance will begin in a few minutes. Get your tickets at the front entrance."

"Prisoners!" Halcon thought.

There was no question but that the midgets were in a cage. The stage was nothing but a big cell. The heavy wire netting at the front extended over the top. The back of the cage, the sides, the front, the floor, were wood.

Following the repeated requests of the barker, the crowd was shuffling reluctantly out. Some of them were hurrying to get tickets for the next performance. Halcon intended to do the same. Then he saw the midget sitting near the exit. The little man was watching the faces of the crowd. To all appearances he was doing nothing but sit quietly on the floor and pay no attention to anything. The quick glances out of the corners of his eyes revealed he was looking for something.

"I wonder—" Halcon thought. He took the cat's eye agate out of his pocket. Deep in the black screen in the heart of the little jewel the tiny sign was still flashing its mute appeal for help. As he went past with the last of the crowd, Halcon held the agate in his hand so the midget could see it.

The little creature's eyes glanced at the agate, froze there. The midget stiffened. He looked quickly up at Halcon's face. The scientist nodded. The

midget nodded in reply, then looked quickly away.

Halcon was a little disappointed. He didn't know what he had expected but somehow he had anticipated more of a reaction than a nod. Well, maybe he was wrong in thinking there was a mystery here. Maybe the whole thing was a hoax. Maybe Silver had been telling the truth when he said the agates were an advertising stunt designed to lure suckers into the sideshow.

AS HE left the tent Halcon saw the midget had risen to his feet and had walked into one of the little sleeping huts. Moving with the crowd, the scientist passed through the exit. He was starting back to the entrance to buy another ticket when something brushed against his leg. He looked down.

The midget who had watched the crowd was tugging at the leg of his trousers trying to attract his attention. Halcon bent down. Simultaneously three things happened. The ten-year-old who had been in the sideshow saw the midget.

"Mommy! There's one of the little men!" he squealed. "Mommy! Catch him for me! Mommy!"

There was a rush of feet as the ten-year-old grabbed at the little man. The midget dodged.

A circus worker, attracted by the scream of the child, saw the little creature.

"Hey!" he yelled. "Hey! What're you doin' there?"

Halcon picked up the midget, thrust him inside his coat, and ran around the corner of the tent. He knew what was going to happen next. It happened.

"Hey, Rube!" the terrible circus yell was raised.

Halcon knew he had to act fast. Faster than an air-raid siren, the "Hey, Rube" yell would alert every circus

man. As soon as he was around the corner of the tent, Halcon stopped running. He walked leisurely up to the front, bought a ticket, and re-entered the sideshow.

Outside he could hear a furious search in progress. Barked orders, the sound of running feet, the snarling voice of Ed Silver. Halcon fervently hoped he had not been recognized. If they caught him a second time—

Clinging to the pocket inside his coat, the little man he had rescued did not move a muscle.

"Ladies and gentlemen—" the barker began again.

On the stage the two midgets began swinging in the gymnasium, the smith began pounding on the anvil, the quartet lifted their voices in song. The haunting melody of Home Sweet Home floated through the tent. The little men gave no indication that they knew one of their number had disappeared.

Halfway through the performance Silver came into the tent. Halcon pulled his hat a little lower over his eyes, kept back in the crowd. The manager went directly to the stage. One by one he carefully counted the midgets. Scowling, he counted them again.

On the stage, the little men watched the business manager. They recognized Silver all right, recognized him, feared him, hated him. Their faces revealed their fear and their hate.

Silver finished his second count. Nine midgets were supposed to be in that cage. But he could count only eight. As long as one of them was snuggled inside John Halcon's coat, he would never count more than eight.

When he left the tent, Silver's face revealed something too—black, scowling anger. Above the chant of the barker, Halcon could hear Silver swearing outside. The circus manager knew one of his prize midgets was missing. John

Halcon knew he was going to be lucky if he got off the lot alive. Outside the tent dozens of keen eyes were watching for him. The alert was on.

The midget snuggled up inside his coat seemed to realize the situation. Halcon felt a sharp little elbow digging into his ribs. He lowered his head.

"Close to stage," a tiny whisper came to his ears. "Go near stage."

"Why?" he questioned.

"I think I can help us get away," the answering whisper came.

### CHAPTER III

THE little creature inside his coat knew he was trying to help it. In turn, it was trying to help him, trying to help both of them. The knowledge gave Halcon a warm glow. They were partners, the big man and the little man. Moving with the crowd, the scientist unobtrusively worked his way forward until he was standing directly in front of the stage.

"Ssst!" The midget inside Halcon's coat hissed sharply.

At the sound, the smith looked quickly around. His soft brown face keenly alert, he scanned the crowd of giants peering through the wire screen at him. His eyes focused quickly on Halcon, then on Halcon's coat. Then he lost all interest in everything but the piece of iron he was hammering on the anvil. A few seconds later, the smith thrust the iron back into the little charcoal fire, and with elaborate unconcern strolled nonchalantly along the front of the stage.

Halcon thrilled at the sight. These little men, whatever else they were, were certainly supplied with brains. The smith was putting on an act. He had heard the hiss of his comrade but he was pretending complete lack of interest until he knew what was required

of him, an action which required intelligence of a very high order.

As the smith strolled past Halcon, the midget inside the latter's coat hissed something at him. The words were in some language the scientist did not even recognize.

The smith walked to the end of the stage, turned. Suddenly he yelled at his comrades. His voice was a piping whisper of penetrating sound.

The midgets on the stage instantly reacted. The singers stopped their song in the middle of a note, the gymnasts dropped from their bars, the sleepers in the huts awakened. The words of the smith were a bugle call to action.

Almost faster than the eye could follow the midgets dashed into one of the huts. Halcon saw them yank up a trap door, begin dropping through it one by one.

"Hey!" someone in the audience yelled. "Your midgets are escaping."

The barker saw what was happening. "Help!" he yelled. "Joe! Sharky! The damned midgets have sawed a hole in the bottom of their cage and are getting away. Come and help me catch them!"

Circus workers boiled into the tent. A midget darted out from under the stage. A roustabout dived at him and he darted back. Another one made a dash for the exit, his lithe little body twinkling around and between the legs of the crowd.

"Catch that one!" the barker yelled. "Everybody help. If they get away, Silver will skin us alive."

The ticket seller at the front had entered the tent. He took after the midget running toward the exit.

A third midget took this opportunity to dash out the front entrance. A blue-clad circus employee charged madly after him. Halcon thrust out a foot. The circus man tripped, plowed a groove in the sawdust with his nose.

"Get the Rubes out of here!" the barker roared.

Halcon was aware of a hard little fist pummeling against his ribs.

"While they're chasing the others, us get out of here."

"But what about your friends?" Halcon protested. "We've got to help them, haven't we? They're trying to escape, too."

"Only pretending to escape," the answer. "While men chase them, us escape. When us get away, they give up. They helping us."

"I'll go right straight to hell!" Halcon gasped. "A diversionary attack! Okay, my little partner. While your friends run, we'll get away."

It was exceedingly clever planning, exceedingly fast thinking on the spur of the moment. If Halcon had needed another example of the keen intelligence of these little people, this diversion to provide a cover while they escaped would have given it to him.

While the circus men frantically chased midgets, Halcon and his partner strolled nonchalantly out the main entrance, got into his battered old car, and casually drove away.

John Halcon lived a sort of Dr. Jekyll and Mr. Hyde existence. He had a modern suburban home, a wife, and two youngsters in grade school. He also owned a ramshackle old brick building, once a factory, at the edge of the industrial district. From the outside this building, with its unwashed windows and general air of disrepair, looked like it was the proper hideout for gangsters on the dodge. Inside—if you were one of the few people who could get inside—was one of the best equipped laboratories in the world.

**H**ALCON spent most of his time in this laboratory. He had a cot there and a refrigerator full of cold beer. He

frequently spent the night in his lab when some experiment was cooking. His wife had long since become reconciled to the fact that she would see her husband when she saw him.

The little man sitting silently on the seat beside him, Halcon drove to the laboratory. A night wind was blowing across the lake. A full moon was in the sky. To the north the lights of Chicago threw a pale glow of light against the sky.

"Name is Monar," the midget said. "Thank you for helping us."

Halcon opened a bottle of beer, gravely offered some to the little man who tasted it, then set it aside.

"My name Halcon," the scientist answered. "I am glad to help you, Monar. But where did you learn to speak English?"

"We learned your language from the circus."

"How long have they been holding you prisoner?" the scientist continued.

Monar shook his head. "A long time. I do not know how long. I do not know how you measure time. It has been many days since—" He paused. The grave little eyes measured Halcon.

"Since what?" Halcon asked.

The midget shook his head.

"Where did you come from?" the scientist questioned.

Again the grave eyes measured him. "I think you are our friend," Monar said at last. "You have shown your friendship by saving me. But—"

"But what?" Halcon gently asked.

Monar shook his head again. "You are human," he replied. "I think you are our friend but you are human and I cannot bring myself to—to trust—" His voice faltered into silence. The midget looked distressed.

Halcon sighed. "Once burned, twice shy," he murmured. "I don't blame you for not trusting the human race.

There are times when I wouldn't trust it very far myself."

Although his curiosity was aroused to fever pitch, Halcon had no intention of trying to force Monar to talk. The use of force has never yet solved a problem in human relations. Halcon was a giant, Monar was a midget. It was the giant's job to establish mutual respect and understanding between them. When they understood each other, when the midget could trust the giant and knew that he could trust the giant, then Monar could tell his story. Until the little man was willing to talk, Halcon could wait. He had all the patience of the great scientist, the ability to wait and work, to keep on waiting and keep on working.

"I don't quite understand about that trap door in the bottom of the stage," Halcon continued. "You could have used it to escape at any time. If you wanted to get away, why didn't you just slip out at night?"

"Several reasons," Monar answered. "If we slip out at night, well, there are things you call cats and dogs. To you, they are harmless. To us, they are very dangerous. Then there are other dangerous things here, things that we do not understand at all. The machine that you drove here, there are many of them that we have seen. There are children who would tear us to pieces. Before I left the safe stage, I had to have a human to protect me, to save me from the dangers we do not understand. To us, your world is very big and very deadly."

"I see," Halcon said.

"I have slipped out several times seeking help," Monar continued. "Once, at night, I went up to a man and asked him to help us."

"What happened?"

The midget shook his head. "I must have frightened him. He ran from me."

The scientist grinned. "He probably

thought he was seeing a miniature ghost."

"Another time I slipped out at night. This time the man did not run. He put me in a cage for his children. I barely was able to escape."

Halcon nodded sympathetically. He was beginning to appreciate the problems of these little people. No wonder Monar would not trust a human very far! All of his experience had indicated that humans were not to be trusted.

"Then not just anyone could help us," the midget continued. "We made the little stones with the lights in them so the person who came to us would be mentally ready to help, if he could. We have dropped the stones on many places. Many times they were found by the circus men. Three times a friendly human found them and tried to help us."

MONAR shook his head. "A woman found one of the stones. She would have helped us. She was kind. I slipped out and went to her. Her heart was right but she didn't know what to do. The others were men. One of them was—how to say it?—one of them was just curious, the other was a kind fool. They could not bring me what I needed."

"What did you do?"

"Escaped from them, went back to the circus. Somewhere, sometime we will find a man who can help us."

Halcon whistled softly. "You have faith, you have patience. Those are important things, Monar. But what will you do if I cannot or will not help you."

"I will escape," the midget firmly answered. "I will go back. Only a very special man can help us. We will keep looking until we find him."

Halcon sipped at his beer. He was

sitting at a wooden workbench and Monar was standing on top of the bench. Their faces were level. The fluorescent bulbs on the ceiling threw soft but brilliant light over the entire laboratory, over the thousand and one pieces of electrical and mechanical equipment that a physicist uses in his experiments. There were tools here, all the tiny pliers and screwdrivers that you could ever use, a small lathe, a power saw, a small electric furnace, a pump for exhausting the air from vacuum tubes. There were galvanometers so sensitive they could detect the pressure of a millionth of a volt, there was an electronic device so sharp it could measure the time a light beam took in crossing the length of the laboratory. There were vacuum tubes of all kinds, from the tiny little tubes developed for use in the nose of a cannon shell to a giant water-cooled monster used in a high-power radio transmitting station. Manufacturers had sent many of the tubes to Halcon for testing. Others he had devised himself, to aid him in experiments in that region where physics and electricity, where matter and energy, overlap and meet.

"I do not know that I can help you," the scientist slowly said. "But I will help you if I can. What is it you need, Monar?"

The eyes of the midget went over the laboratory. "I think we have found the man who can help us at last," he said softly. "I can't exactly tell you what I need. I do not know the words for that. But if you will let me, I will try to show you."

The scientist nodded. With Monar perched on his shoulders, he went slowly over the laboratory. The midget examined every piece of equipment, every tool, every measuring instrument, every vacuum tube, with intense interest. Using halting English, he asked

endless questions. Halcon answered as best he could. His interest and his curiosity were mounting every moment.

The midget wanted to build something. Halcon could not begin to guess what Monar wanted to build but the questions the midget asked indicated he possessed a knowledge of science equal to anyone on earth.

Out of a circus sideshow had come one of the keenest minds Halcon had ever known!

## CHAPTER IV

TWO breathless days and nights later the instrument Monar was building was almost finished. Halcon had vague memories of having slept a little each of these two nights. Sleep was a luxury he could do without. He couldn't do without eating, so occasionally he went out and grabbed a bite at the nearest restaurant, bringing food back for Monar. The midget ate with obvious distaste. He didn't like beef, he didn't like fish, he didn't like vegetables or fruit. When Halcon asked him what he wanted, he evaded the question.

"This food will keep me alive. Nothing else matters. And if this works—" He pointed to the equipment they had assembled—"It may be that soon I will eat my own kind of food again."

He did not say what his kind of food was, nor did Halcon press him for an answer. The scientist respected the feelings of the little man. Halcon would have given his right arm if Monar had been willing to solve the mystery of the origin of the midgets, to answer any of the questions he wanted to ask about the little people, but if Monar did not want to talk, that was his privilege. Halcon wanted Monar's confidence but he wanted it freely



given. They went back to work.

Halcon was doing most of the work, under Monar's guidance. The tools in the laboratory, even the tiny pliers and screwdrivers, were made for human fingers. Monar could use them only clumsily. He could lift the electric soldering iron but he could not use it effectively. The vacuum pump was completely beyond his ability. He understood the pump, knew why it was used, what it was for, but Halcon had to do the work with it. They used it to evacuate the air from four little vacuum tubes that Monar designed. The scales on the volt and ammeters he could read, but before he could really understand them, he had to translate the volts and amperes into his own measurements. Halcon, watching in silence, realized why only a special person could help the midgets. Only a highly skilled technician would have possessed the knowledge Monar needed to create the instrument he was building.

What was this instrument? Halcon's shrewd guess was that it was some kind of a radio set. How was Monar going to use this peculiar radio set? Here the scientist refused even to guess. That was Monar's business. He was trusting Monar.

They soldered the last connection in place, turned current into the instrument. Halcon sat on a stool and watch. The instrument was on a table pushed against the wall of the lab. Sitting cross-legged like a Turk, Monar watched his brain-child with all the fervid intensity of a snake charmer staring at a cobra held motionless by the sound of his flute. Occasionally the midget adjusted a tiny condenser, changed the value of a coil.

Nothing happened. The instrument was working, the little tubes were glowing a dull red, the meters fitted into the circuit showed current was flowing, but

nothing was happening.

"Doesn't it work?" Halcon asked.

"It works, but—" His voice was sad.

When they had been building the instrument, Monar had shown great eagerness. As they finished it, he was almost too excited to breathe. He had expected something to happen. It hadn't happened. A little by a little the eager excitement was leaving his face. He looked lonely and forlorn.

"I'm sorry," Halcon said. "Is there anything I can do?"

"Thank you," the midget answered.

"No, there is nothing anyone can do."

He switched the current off, picked up the smallest electric soldering iron in both hands, manfully soldered a suspicious connection, turned the current back on.

NOTHING happened. In the last tube a little electric eye glowed steadily. Monar watched this eye intently. The glow did not change. Halcon got a bottle of beer from the refrigerator. There was silence in the laboratory. With every passing minute, Monar looked more forlorn. Halcon finished the beer.

"Perhaps tomorrow we can find what is wrong," he suggested.

Monar threw him a grateful glance. "There is nothing wrong, with this," he pointed to the instrument. "The wrongness is elsewhere."

Halcon was tired. Two days and two nights almost without stopping. The midget sensed his fatigue. "Why don't you rest?" he asked.

"I think I will," the scientist answered. "What about you?"

"I'll stay here and watch," Monar answered. The sadness in his voice tugged at Halcon's heart.

Halcon laid down on the cot. Perhaps it was the beer, perhaps it was the two days and nights. He was asleep

as soon as he touched the blankets. He awakened with the crash of breaking glass loud in his eyes, sat up on the cot, was aware of two facts.

Monar was standing on the table. In the last tube of the instrument he had designed the little electric eye was winking. Somewhere in the depths of the electronic cell a mad dance of pulsing fire was going on.

Monar was not looking at the dance of light in the electric eye. His body frozen rigidly, he was staring across the laboratory. Glass fell again as the whole window frame was knocked in.

Through the broken window, Ed Silver vaulted into the lab. The circus man was grinning.

"Had a little trouble discovering exactly who you were," he spoke to Halcon. "Then we had a little more trouble findin' you. If it hadn't taken us so long to locate this little hideout of yours, we'd have been here sooner."

Behind him, a roustabout lifted a long leg over the window sill, dropped heavily into the room. A little man in a checkered suit followed the roustabout. The little man had a face like a rat. He was carrying a blackjack.

Silver saw Monar standing on the table. "I came for my midget," he announced. "I'll just take him." He started for the table.

Halcon leaped to his feet.

"No, you won't. Monar has as much right to freedom as you have. You're not going to take him back to that sideshow prison."

Silver grinned. "He's my property, the property of the Zenith Shows. I've come to collect my property."

"The courts in this country do not recognize property rights in human beings," Halcon answered.

"He's not human."

"I don't give a damn whether he's human or not. He's smarter than most

humans I've known and I don't intend to see you take him back to that sideshow."

"You don't? Let's see you stop me?" The circus manager stepped toward the table.

Halcon lunged at him. "Run!" he yelled at the midget. "Run! Hide! Get away from here. I'll keep them busy until you can get out."

He threw himself between Monar and Silver. A few seconds would be all he needed. Monar's twinkling little legs could carry him faster than the wind. he could jump from the table, dart under it, run through and around the equipment in the laboratory faster than Silver and his men could follow.

The circus manager realized what would happen. He leaped back, leaped away from Halcon. The scientist tried to follow. The little man with the rat face came up quickly from behind, used his blackjack.

The blow fell across the side of Halcon's face. He sensed it was coming, tried to dodge, failed.

*Thwuck!*

A RED mist filled with balls of exploding light flooded across his vision. He fell to the side, tried to hold himself up by grabbing the side of the table. His fingers slipped. He hit the floor and tried to roll.

The strenght had drained from his muscles. Dazed, stunned, he could see vaguely, but he couldn't move. It didn't matter. He had gained the few seconds Monar needed to escape.

Oddly there was no mad chase going on in the laboratory. Silver stood at one end of the table, the roustabout at the side. The rat-faced little man in the checked suit hastily moved to the other end.

Halcon saw why. Monar was still on the table. He hadn't taken the op-

portunity to run. The scientist groaned. He saw Silver snatch at the midget.

Monar grabbed the hot soldering iron, thrust it into the hands that were reaching for him. A hissing, frying sound, like grease burning in a hot skillet, sounded for a second.

"*Damn him!*" Silver screamed, snatching his hands away. "He burned my hand off!"

"Good for him!" Halcon grimly thought. He was still dazed but he was feeling a little stronger. A strange throbbing buzz was sounding in his ears. He tried to rise, couldn't make it. Shaking his head to clear the buzz away, he lay still. The buzz persisted.

Silver danced. "I'll break every bone in that damned midget's body!" he screamed. "I'll grind him up and feed him to the cats. I'll—get him, you two. Don't stand there like the damned fools that you are."

The roustabout thrust a hand toward the midget, hastily drew it back as the soldering iron came in his direction.

"He'll burn us if we get near him," the roustabout protested.

"I can smack him down," the rat-faced man suggested.

Even with a burned hand, Ed Silver was not going to let his anger cause him to destroy valuable property. "Don't kill him," he shouted. "I want him alive. He's worth money to us."

The two men hesitated. Halcon tried to sit up. The buzz was stronger now.

"Grab a blanket off that cot and smother him in it," Silver ordered. "He can't burn you that way."

Halcon sighed. Valiant fighter Monar might be, but this was a fight that could have only one ending. An eighteen-inch midget would never whip three men.

The roustabout grabbed the blanket, tossed it over the table. Monar dodged. The heavy woolen cloth fell over him. He thrust at it with the soldering iron.

Smoke puffed out.

Monar screamed as strong fingers closed over him, smothered him in the folds of the blanket. Holding him carefully, the roustabout peeled off the blanket, closed his fist around the midget.

"That's that!" said Silver, satisfaction in his voice.

Monar tried to wiggle free, tried to bite, tried to kick. The fingers held him tight.

Halcon grabbed the leg of the table, reached for the top, pulled himself to his feet.

"And as for you, Doc," Silver said. He paused, thinking what he was going to do.

"Rats, lend me your blackjack," he said, reaching a decision.

The rat-faced thug grinned, passed the cruel, lead-weighted leather to the circus manager.

**H**ALCON could barely stand up.

There was something wrong with his head. The buzzing, instead of fading away, was growing stronger all the time. It sounded like the engines of a dozen model planes running at the same time. Silver hefted the blackjack, drew back his arm.

The blow didn't fall. A sound turned the circus manager's head toward the broken window. His eyes grew large.

The buzzing in Halcon's head was stronger than it had ever been. It sounded as if it was inside the laboratory.

"What the hell is that?" Silver whispered.

Halcon turned. Something was coming through the broken window, something that looked like a small balloon. It was just small enough to scrape through the window. From jets along the bottom flame was streaming. The buzzing sound came from the jets.

Scraping against the edges of the broken window, supported on the throbbing jets, the balloon, like a small dirigible, forced its way into the laboratory.

It was about thirty feet long, five feet in diameter. The nose was transparent. Figures were seated behind out-thrusting tubes in the transparent nose.

Held in the roustabout's fingers, Monar wiggled desperately. The figures in the transparent nose saw him. Excitement lit their faces.

Monar pointed toward Silver.

The dirigible balanced itself on its jets. Behind the transparent nose, the tubes swung around to cover Silver. Fire jetted from them. And jetted again. And again.

Silver screamed. Like bullets from a machine gun, the electric discharges hit him. Like a man who has been stunned by contact with a live wire, he began to fall. The electric discharges played over him all the way to the floor.

Monar was wiggling again. He was pointing to the roustabout who held him. The tubes in the nose of the ship began to swing.

The roustabout didn't have any idea of what was happening. All he knew was that he was IT. He had seen Silver fall. He realized he was next on the list.

Dropping Monar like the midget had suddenly become red hot, he dived toward the window. The rat-faced man was right behind him. Jutting electric discharges from the tubes in the nose of the ship punted them in the tail as they went out the window.

The tubes in the nose swung to cover Halcon. Monar, on the floor where the roustabout had dropped him, frantically shook his head.

"My partner," he screamed at the top of his voice. "This giant is my partner."

The muzzles of the tubes remained dark. Throbbing softly, the dirigible was maneuvered to a clear space in the laboratory, then was eased gently to the floor.

A lock in the side opened. A midget stepped out.

"My people," Monar said proudly. "My people."

THE midgets swarmed over the laboratory. They poked into everything. The equipment interested them greatly. They examined it with the intetness of ants.

Standing on the table beside the instrument he had devised, Monar explained.

"High frequency radio," he said, pointing to the instrument. "Tuned to radio in ship. Direction—" He groped for a word.

"Direction finding," Halcon nodded. "Your people picked up radiations from this transmitter and rode the beam in. That's how they found you. But—" It was his turn to grope for words.

"Where did we come from?" Monar suggested. "Is that what you wanted to ask, partner?"

"Yes."

"I know I can trust you now so I can answer," Monar grinned. "We came from the Moon."

"What?"

"From the Moon," Monar insisted. "We have visited your world before. You have legends—"

"Of little men! Sweet God!" the scientist gasped. "But you—that side-show—How did you get there?"

"I was leader of patrol that left the ship to explore," Monar explained. "We were somewhere in the mountains. One of you humans trapped us all. He sold us to an agent for the circus. That's how we got into sideshow."

"And all the time you were there, the

ship waited for you?"

The midget nodded. "They would wait. They didn't know where we were or what had happened to us. They would wait as long as supplies lasted, or until they knew we were dead. My greatest fear, when I built this radio, was that my people had already returned home."

On the floor, Silver groaned. "He will recover," Monar said. The electric gun will kill one of us. A giant it will only stun."

"I see," Halcon said. "I see. And now?"

"We have one more thing to do," Monar answered. "Then we go home. Supplies are low."

"And that one thing?" the scientist questioned.

Monar grinned and explained.

THEY tell the story around the Zenith Shows of the great sideshow exhibit they once had. Midgets. A sideshow full of midgets. Made more money than all the rest of the show put together. Only they don't have it any more. Not any more. The fact that they don't have it almost breaks Ed Silver's heart but there's nothing he can do about it. Not a blasted thing! He has advertised all over the world for more of those midgets and he can't find a single one. Not one.

He rather shrewdly suspects he will never find more midgets. He suspects they've gone somewhere where he can't find them. The stories his men told him when, dazed and shaken, he got back to the circus lot just at dawn make him suspect the midgets are out of his reach forever.

The circus employees say a tall man came driving a ramshackle old car right into the circus lot that night. They say he drove it right straight through the wall of the sideshow tent where the

midgets were held prisoner. They say a midget rode on his shoulder as he drove and that a whole damned balloon full of midgets followed him through the air.

The circus men say they tried to resist, tried to stop what was happening. They say all hell broke loose then. They say the cage that held the midgets was busted wide open, the tent was torn down, and when they tried to stop it, the damned balloon overhead poured them so full of electricity that they shot off sparks for weeks. They say the tall man with the midgets swore at them in five different languages and told them he would personally cut their throats and make them drink their own blood if they didn't get the hell out of the way. They say they might have taken care of the man but that the damned balloon shot them full of electricity every time they tried to get near the tent.

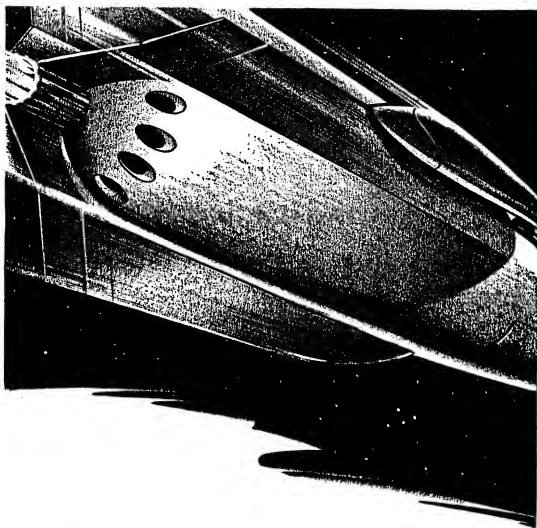
They say the midgets from the sideshow got into the balloon right there in the middle of the lot and that the man who was with them squatted down and shook hands with every one of them as they went in. They say the man stood there in the lot when the balloon went up into the sky and yelled at the top of his lungs, "So long, partner."

They say that the silvery voice of a midget came whispering back from the sky.

"Goodbye, partner, goodbye."

What they don't tell, because they don't know about it, is that in a laboratory in an old building near the edge of the industrial district, a world-renowned scientist keeps a directional transmitter going day and night. For Monar promised the midgets would return.

When they do return, John Halcon wants to be damned certain they can find him.



THE *visi-screen* of the *Olympiad* cast back a reflection of the void its tapering nose pierced. Ahead shone Mars in sullen crimson; the green glow of Venus was high above a milky train of meteors that arched like a rainbow against the fathomless dark of the void.

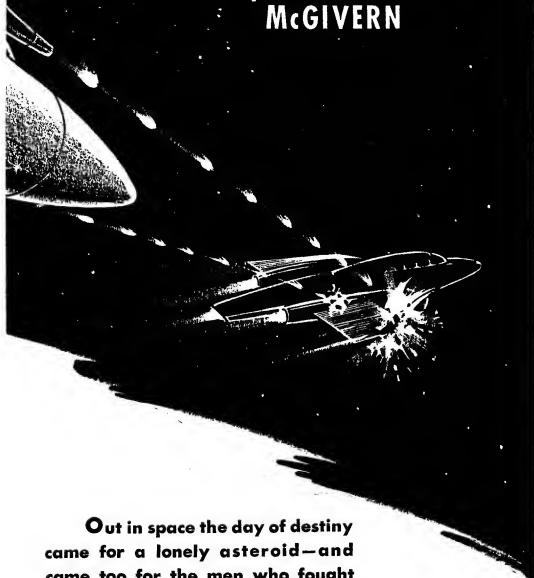
Deflexive rays surrounded the *Olympiad*, forming a shield against the star fragments that ranged through space in uncharted orbits. They loomed dead ahead as pin points of light that changed to awesome size as they rushed the speeding *Olympiad*; approaching they filled the *visi-screen*

and then their craters and pits were visible like scars. When they moved into the *Olympiad's* deflexive belts they veered suddenly and their hurtling passage could be heard through the *duraluminum* hull of the sleek space craft.

Corneal stood on the captain's bridge watching the panorama of space unfold and there was a soft smile at the corner of his mouth. Too rugged to be considered handsome, too tall and large to be considered graceful, he appeared as a man stripped of essentials, but made for a job and strangely out of place when not doing that job.

# THE DEATH OF ASTEROID 13

By WILLIAM P.  
McGIVERN



**Out in space the day of destiny  
came for a lonely asteroid—and  
came too for the men who fought  
for her!**

He was the captain of the *Olympiad*, a man of strength and silence; of sworn dedication to the service of Earth. There was nothing in his life but duty. He placed it first and last among his values. It was the start of him and the end of him; his motivation, his drive, his reason for being.

Now he pushed jet black hair from tinent twitch at the corner of his mouth. his forehead and there was an impa- The smile was gone.

Snapping the *audioswitch* at his panel he raised the navigator.

"Check your course," he ordered. His voice was flat, impersonal.

"Yes, sir."

The answer came in a moment. "We're a point off, Captain. I'll have it corrected."

"Have the Helmsman on duty report to me after his trick."

He snapped the connection. There was no tolerance for error in his mind, whether it be his own or another. He drove himself unsparingly and his men respected him; but he was not a man they could like. Other space captains had nicknames and antedotes had grown about their exploits.

Tales that were told with grim affection after long watches. Of Corneal there was nothing. He was known as a fabulous navigator; and in the days of space raiding and void warfare he had struck fear into the very souls of those he pursued, of those who broke the laws of Earth. His single jet crimson ship had been known and feared from the wastes of Jupiter to the rings of Saturn.

But stories were not told of Corneal. There was no affectionate halo of glory set on his name. He was a living machine; had he been more human he would have been a living legend.

The door at his back opened! Alan Nelson, his second in command, sa-

luted, came to his side. They stood for a moment in silence watching the *visi-screen*.

They had been away from their base nine weeks now; and Nelson was growing restless. He was young, only twenty-two, a blond, smiling Lieutenant, happier in the bars of Earth than voyaging in the void. His chief complaint was loneliness. He could not associate with the men; and there was an iron barrier in front of his captain which he could not penetrate.

The silence grew and he knew that he must break it or leave.

"We're right on course," he said. "I checked it myself."

"When?" Corneal asked the question without expression?

"Why just a few moments ago, sir."

"Two minutes ago we were two points off, Lieutenant."

Nelson wished he had kept his mouth shut. "I'll see about it, sir," he said, nervously.

"It's been taken care of."

Nelson let out his breath slowly and watched his captain's iron-hard profile discreetly. There was no give to the man, no break at all in his rigid control and self-sufficiency.

**T**RYING to change the subject Nelson said: "Do you think we'll be out much longer." Almost as the words left his mouth he knew he had made a mistake. Corneal looked at him with cold gray eyes and Nelson felt himself shaking.

"I mean, sir," he said, "it's none of my business, of course, but I was wondering."

"You are not required to speculate upon or discuss the orders of the Council," Corneal said in a hard voice.

"I know, sir."

"Very well. Go below and attend to your work."



"Yes, sir." Nelson faded away quickly.

Corneal stood alone on the bridge. The incident was out of his consciousness now; but it would remain filed away in a pigeon hole of his mind until he died. This sorting process was automatic with him, as inevitable as his breathing. Should Nelson's name come up for advancement in twenty years Corneal would remember him as a youth with unseemingly curiosity.

He himself was without curiosity. His orders became a blueprint for his existence, his chart and guide. There was emotion in him, but it was an inverted thing, directed against the enemies of earth, not as people but as they represented symbols of lawlessness.

For another half hour he watched the progress of his ships through the shifting void; then he went below for his dinner. His orderly waited until he heard his footsteps on the companionway, then hurried to bring in the dishes of food.

Corneal ate alone in full uniform. This was a ritual of his, a pattern he had made and kept. He discouraged intimacy as some men will discourage a bore or a fool. His desk and charts were against one wall; his bunk against the other. The long table was between them facing the one ornament in the room, a picture of Corneal's father, vice-fleet Commander Corneal, a man with wintry eyes and tight arrogant features. From his father Corneal had taken a pattern of life. And in his thirty years he had never regretted his choice.

Corneal was sipping the one glass of rare martian port he permitted himself when there was a knock at the door. He said, "Come in!" immediately. His mind was ticking automatically. His orders were that he was not

to be disturbed at dinner. Therefore the cause of this interruption must be important.

Nelson opened the door in response to his command. He saluted and put a coded message on the table before Corneal. He looked pale and Corneal knew he was terrified at having interrupted his captain.

"The message was marked with three stars," Nelson said, standing at attention. "I thought the captain would wish to see it immediately."

"You were right."

Three stars was top priority from the Earth council to its fleet units. He made an automatic note of the fact that Nelson had wisely ignored his orders and brought the message to him immediately. This, too, he filed away. From such tiny fragments he built a picture of a man.

Nelson shifted from one foot to the other.

"Could this be a change of orders, sir?" he asked eagerly.

CORNEAL glared at him and Nelson once again cursed himself for a fool. He would rather have bitten off his tongue than said that particular thing; but it had seemed to slip out. He waited trembling and sick, for the outburst.

But Corneal had a hard sort of wisdom. He knew that Nelson was castigating himself now as he could never hope to; and he also felt kindly disposed toward him for having the initiative to bring him the message during his dinner hour.

And so he said: "We will have to wait until its decoded. I will let you know if there are any changes of plan." He said this last dryly and Nelson flushed.

"Yes, sir," he said. "With the captain's permission, I'll go below."

"Very well."

Nelson hurried out breathlessly wondering as he would wonder to his dying day why the lightning had not struck.

Corneal waited until the door had closed, then went to his desk and placed the coded message in the machine that broke the code with electric impulses.

He watched without any particular curiosity as the message was decoded and finally stood complete on the tape. It read:

"Craft of *Helix* class in area of Martian astrocloud. Suspected as pirate ship known as the Vortex. *Commanded by the Falcon. Contact and engage!*"

For once Corneal felt a twinge of personal emotion. The Falcon was a Mars. He was a phantom, an elusive freebooter whose black ship was seen often in the cloudy understrata of wisp who had shown his crimson jets to the fastest and shrewdest of Earth's Captains. Corneal hated him with something close to fury. The Falcon's flaunting of law, his deliberate mocking of the standards of Earth were violently opposed to Corneal's nature.

Now he snapped on his audiophone and gave orders to his navigators.

"Change course immediately. Hold three points off present course for ninety seconds. Then hold direct for Mars."

"Yes, sir!" the navigator snapped, and Corneal knew from the enthusiasm of his tone that Nelson had spread the news that a change of orders might be incipient. He made a note of that automatically; but he could understand the navigator's excitement. While Corneal did not concern himself with politics it was common knowledge that the relations between Mars and Earth had strained to the snapping

point. There had been no trouble yet, but the Council had ordered its fleets into the void ostensibly for maneuvers; but everyone knew that the ships were the first line of defense in case of trouble, a ring of speeding steel that girdled the softly glowing planet of Earth.

Corneal drank two cups of steaming hot coffee and went up to his bridge. Watching the *visi-screen* his eyes flicked over each detail that flashed across its surface; but there was still a part of his mind free to think. And he was thinking of a possible encounter with the black ship known as the Vortex and its fabulous commander, the Falcon. The stories told of the Falcon's skill were scoffed at by seasoned commanders, but secretly believed. For once he had engaged an Earth squadron and led it helplessly and futilely across a gigantic expanse of void, before slipping it easily and disappearing.

This was a matter of record, signed humiliatingly by nineteen captains of unquestioned integrity.

PRIDE was absent from Corneal's make-up; but he knew objectively that there was no pilot in the service today who could master him in maneuvers; and that no gunner was faster or more deadly. These things he knew were true. And he knew that the Falcon's reputation was based on fact.

For those reasons he wanted to meet the Falcon; but chiefly he wanted to bring the Falcon to Earth because he was a law-breaker, a man who had renounced his planet, who preferred sailing the void, free and undisciplined, to putting talents in the mold of service to Earth.

Now the *Olympiad* was drawing near to the sullen red globe of Mars.

It was a growing disc in the top left corner of the *visi-screen* swelling steadily as the *Olympiad's* mighty jets sent it speeding silently through the black void.

Beneath Mars hung a vast nebulous chain of *astrocloud* formed of cohesing planet fragments, whitening as their splitting centers were pierced by the void's absolute zero.

Suddenly Corneal saw a black streak flash across the lower right corner of the screen. Its passage had been too swift to identify; but he snapped orders immediately.

"Change course one quarter of a point. Watch for strange ship dead ahead."

The *Olympiad* swung to its new course.

Corneal searched the screen but saw nothing.

"Throw on the auxiliaries. Full speed ahead!" he snapped.

The *Olympiad* leaped ahead under the tremendous impetus of its full power. For half a moment they raced on the new course; then in the center of the screen a black dot appeared, grew larger and in a few seconds Corneal saw the twin crimson flashes of its jets.

"Steady on course," he ordered. "Draw abreast of that craft."

They raced on for several moments in silence. Corneal from his bridge looked down on the backs of the pilots and the helmsman. They were rigidly intent on their work. He felt the smooth functioning of his ship and it brought him a strange peace. His mind knew what was happening to each plane of the ships hull, to each jet, to each rivet; and he could follow the operations of his crew in the engine room, the plotting room, the fore and aft gun turrets. He knew precisely what each man would be doing, and

this feeling of being the soul and brain of a swift deadly engine of justice brought him satisfaction.

All emotion subordinated to a mission. All energy bent on one task. Everything concentrated and unified. Men, steel, knowledge, fission of elements and skill blended and forged to one weapon for one purpose.

They gained steadily.

Corneal contacted the fore turret.

"Stand by!" he ordered.

"Stand by!" He heard his command repeated.

"Fire a barrage on their port and starboard sides."

The command was repeated and almost instantly eight orange balls soared from the nose of the *Olympiad* cutting a parabola across the black face of the void.

The second barrage followed immediately; and Corneal watched with grim satisfaction as the shots flashed past the sides of the speeding black ship.

Close enough to singe the plates!

HE WAITED a moment for the black ship to come about, but it continued its flight, ignoring the barrages which was the adopted signal of the Council.

Corneal felt a smouldering anger. The Falcon was defying an order of his, an order of the Council. Deliberately, carelessly, the *Olympiad's* signal was defied.

"Fire!" he snapped.

"Signal?"

The gunner's hesitation hardened Corneal's anger. The men were becoming so soft that they questioned an order to fire.

"This is not a course in marksmanship, gentlemen," he said, in an icy voice. "Ahead of us is an enemy of Earth. Fire!"

"Yes, sir!" The gunnery officers voice was exultant.

The deadly barrage leaped forth again; but the black ship was climbing now, spiralling upward at the exact instant the barrage had been released.

Corneal watched the brilliant maneuver with controlled rage. The Falcon had changed course as if he had been standing in the *Olympiad's* plotting room and had known precisely what Corneal's orders had been.

That was the start of a chase that led them beyond Mars by a half million miles. The Falcon kept carefully out of range most of the time and to catch him; and when they did get within firing range he anticipated their barrages and twisted away.

Corneal's face was hard and cold. He wanted to take the controls himself, but that was impossible. From the bridge he directed the tactics of his pilots with all his skill; but he needed the feel of the controls in his hand, the sense of movement and balance that would make his mind become a part of the ship, directing it unconsciously. Only then could a pilot truly match himself against another ship. There was a knowledge, a subtle intuitive sense that developed from studying an opponent. And this knowledge made possible the anticipation of movement that would culminate in a final slashing attack.

Corneal's face showed no strain; it was like something carved from rough wood and then covered with leather. His commands were harsh, sudden, terse as he studied the darting black ship in the screen.

"Climb!" he snapped.

Instantly the *Olympiad* flashed upward and the black ship dropped from the screen. Corneal counted five slowly to himself. He was risking a chance that the black ship might take the op-

portunity to flash out of sight. But it was a chance he felt he had to take.

At the count of five he ordered the pilot to dive.

The *Olympiad* arched at the top of its climb and streaked downward; the black ship appeared in the visi-screen again, closer now and caught by the *Olympiad's* sudden diving attack.

"Now fire!" Corneal said quietly.

The barrage came and the black ship twisted; but not soon enough this time. Two of the glowing orange balls clipped its tail surfaces and Corneal saw instantly that the damage was severe. The black ship was practically out of control.

There had been no answering fire from the Falcon as yet and Corneal wondered about this. He assumed their guns were out of order; but he was taking no chances.

"Stay on their tail," he said.

"Yes, sir," the gunner answered reluctantly.

THEY wanted to finish off the Vortex; but Corneal knew better. The Falcon was adrift dangerously now and he would have to make an attempt to reach his home base. Corneal intended to let him try. He would follow. Then he could destroy the base and rid space forever of these lawless marauders.

The *Vortex* circled aimlessly for several moments apparently expecting the *Olympiad* to finish the job it had started; but as the *Olympiad* showed no sign of continuing the fight it turned two points and started down toward the under side of Mars in a long glide.

The *Olympiad* followed at a safe distance. . . .

Skirting the *astrocloud* they followed the black ship and finally to a pocket formed by the drifting star-fragment. Directly in the center of this

tiny harbor in space floated a single asteroid that appeared to be several miles in diameter.

Corneal ordered the *Olympiad* to hover as the black ship settled slowly to a mooring tower in the center of the asteroid. Now he knew he could end the Falcon forever; one burst from the *Olympiad's* main batteries would blow this tiny asteroid into dust. But he had no intention of doing that. The Falcon was not his to destroy: he belonged to the justice of Earth and it was there Corneal would bring him.

For half an hour he waited; then he ordered one shot fired into the black ship. He knew it would be empty now; but he didn't intend to moor before the pirates chance of escaping was destroyed.

Then he ordered the pilots to settle the *Olympiad* on the asteroid; When the long keel of the ship touched the flaky ground of the Asteroid, Corneal heard the rattle of rocket fire against the steel plates.

He went below to his cabin and called Nelson.

"Take a party of men out the hatchways on the port side," he told him. "They'll be protected then from the firing. Take prisoner all men you find. If they resist you'll know what to do."

Nelson saluted happily and went out. Corneal took off his heavy leather jacket and put on his uniform and helmet. About his waist he buckled the broad black command belt with the silver buckle that indicated his rank. A rocket pistol hung at his side.

He went down the companionway to the starboard and looked out through the vision slots. The *Olympiad* had settled about two hundred yards from the mooring tower, which was located amidst a cluster of steel buildings. Further back there was a larger building with armored sides from which he saw

firing was coming. Behind this was a craggy expanse formed by the pitted surface of the asteroid.

That was all. A mooring tower, a cluster of buildings on a pitiful tiny speck of land in space. And from that these fools had challenged the law of Earth.

He turned to a cadet who was standing guard at the hatchway.

"Give my orders to the gunners to destroy those outlying buildings. Also tell him to knock one side off the building from which the firing is coming.

The cadet saluted and hurried off; and soon the turrets of the *Olympiad* swung about and the stubby atomic cannons were firing.

WHEN it was over Corneal opened the hatchway and stepped onto the ground. From the rocks behind the main building he heard bursts of fire. But the firing had ceased from the large square building behind the tower. One of its walls had melted down; its door hung crazily.

Walking toward the mooring tower he noted with satisfaction film of ash on the ground—that was the remains of the black ship, the *Vortex*. Approaching the large block house he drew his rocket gun.

Another ten feet and a man appeared in the shattered doorway. He wore leather space clothes and hanging from his right hand was a rocket revolver.

Corneal stopped. "Drop that gun," he ordered. "You're in custody of Earth."

"I take no orders from Earth." The smile stayed on the man's weary face. The gun in his hand raised slowly.

Corneal fired twice. Silent rays struck out; the man stiffened, twisted sideways and fell forward on his face.

Corneal waited a moment and listened. There was still firing coming from the rocks beyond the tower; but it was scattered and sporadic now. He guessed that Nelson had about completed his mission.

He walked to the block house and went inside. There was a short corridor that formed an L. With his gun ready he turned with the hallway and stood facing a large room furnished simply with a desk, a few maps and a bunk in the corner. There were two men lying dead on the floor near the walls beneath vision clots. Another was sprawled behind the desk.

Corneal stood still feeling no emotion. These men were law-breakers. Their deaths meant nothing to him but the accomplishment of a mission.

He took a step forward and then stopped. Beyond an open door next to the bunk he heard approaching footsteps. He lifted his gun and said:

"Come out with your hands up!"

"Very well," a curiously light voice said.

The door was pushed aside and a tall, red haired girl entered the room. She crossed the room and stood with her back to the desk facing Corneal. Her eyes were level and her features expressionless.

"I welcome you to asteroid 13," she said.

"Who are you?" Corneal said.

"My name is Mace."

She offered nothing else and Corneal felt a stir of curiosity. She seemed hard and cold as finely tempered steel; but there was a smouldering flame in her eyes that belied the composure of her features, the poise of her body.

She was tall, finely proportioned, with red hair that fell in straight flaming lines to her wide shoulders. A short crimson cape buckled at her throat and hung to her waist. She wore a broad

studded belt about her waist and a to her knees. Her legs were bare, tan-black metallic shirt that hung halfway ned to a deep bronze; and they were slim and strong. Her feet were shod in black boots that flared out at her ankles. She faced him with her hands on her hips, head flung back arrogantly, and there was violent hatred in the swimming depths of her green eyes.

Corneal flicked a glance at the bodies of the men on the floor.

"Which of these was the Falcon?"

"None. The Falcon was a melodramatic name coined by frightened Earth captains. He did not exist."

"Who was the commander then of the *Vortex*?"

"I commanded the *Vortex*."

FOR once Corneal's calm was broken. He didn't believe her at first. It was incredible to him that a girl could have commanded the *Vortex*; but looking at her more closely he decided it was quite possible. She had a strength and power about her that was like his own.

"You are a prisoner of Earth," he said. "When we clean things up here you will be taken back to stand trial."

"That I know. It must delight you. But what am I to stand trial for?"

This will be decided on Earth. It is not my duty to levy charges against you."

She smiled bitterly. "You have killed a dozen brave men and destroyed their ship, but you know not what charges have been made against these men."

"That is not my concern," Corneal said coldly. "My orders were explicit. My concern is in carrying out my instructions." He hated himself for justifying his action to this girl: but something about her arrogant scorn made him feel the necessity of justifying himself.

"You are a slave to your duty," she said. "A blind mindless automaton who can't think for himself. You have murdered honest men and you preach to me of duty. You are viler, Captain, than the enemies of Earth."

Corneal felt an anger that was almost sensuous in its keenness. This was what he stood armed against all his life. This was lawlessness, independence, contempt for the rules of society. She represented these elements in the way she had chosen to live; and it was evident in her defiant arrogance. The straight clean lines of her body, legs spread wide, hands on hips, the head flung back imperiously—this enraged him as would a slap in the face.

"You're hardly in a position to afford such sentiments," he said dryly. "Your cooperation with us might help you at the trial."

"I want no help at the trial."

"Very well. We require your cooperation."

"You will get nothing from me."

"I want to know the names of the men who were with you, the extent of your raids and how long you have operated from this asteroid."

"You will get nothing," she repeated icily.

There was a footstep in the corridor and Corneal turned swiftly; but it was Nelson, flushed and grinning.

"We got them all, Captain," he said, saluting. He saw the girl then and stared in surprise.

"Very well," Corneal said. "Round up the casualties and have them treated."

"Two of our crew were hurt," Nelson said. He paused. Then: "There were no other casualties. The men here refused to surrender."

"They are all killed?"

"Yes, sir."

Corneal saw the girl stiffen; but her

expression didn't change.

"Send two men in to remove the bodies from here. Then check the Olympiad for an immediate return flight. And notify Earth that we have completed our mission."

"Yes, sir," Nelson said, and went out.

"Mission completed," the girl said. "That's your God, isn't it? Carrying out orders that come down to you from some mystic height."

"Not my God, my life," Corneal said.

TWO of his men entered and carried out the bodies of the men. Corneal said to the girl: "Give me your pledge that you will not attempt escape and I will let you free until we reach Earth."

"I give no pledges," the girl said. "Should I get the chance I'll shoot you without delay or pity."

Corneal felt his rigid control snap. He said to his two men: "Bring cords and bind this prisoner."

He watched her in silence until the men returned. She showed no expression. He suddenly felt it desperately important that he break this spirit of hers, humble her to his own precept of order and duty.

He sat down behind the desk while the men bound her wrists behind her back. She offered no struggle or protest; but her green eyes mocked him. The men then stretched her on the cot and tied her legs together at the ankles and below the knees.

Corneal felt a savage satisfaction in the sight of her lying helplessly bound. Now she would know discipline; she would know that her arms and legs and spirit and mind were not hers to use as she chose. There was a power above human will; and to Corneal that power was duty.

He dismissed the men and walked to the cot and looked down at her. She glared back at him in her eyes were contempt. He felt frustrated.

For the bonds he knew had not chained her spirit and mind.

"When you feel willing to cooperate you will be released. Meanwhile it might do you good to think about the fruits of stubbornness."

"I pity you," she said. "You know one method, one motive, one sense of right. And chains are your answer to those who disagree with you."

"I have no concern with such things. I am a soldier, obeying orders. The to others."

"You might be shocked if you had to questions of right and wrong I leave decide such questions for yourself just once."

"The occasion is not likely to arise," he said, and walked out of the room.

Coming toward him on a dead run he saw Nelson. Saluting as he came to a stop Nelson shoved a message into his hands. "Just came in, sir. A conference message to all Earth fleet units."

Corneal opened the message and saw that it wasn't in code. As he read the words his heart began pumping harder. He forced down the chill that spread through his body.

The message read: "Advising a state of War with Mars. Stand by for orders!"

He put the message in his pocket and stared up at the thin atmosphere that clung about asteroid 13; beyond that his mind extended to the black wastes of the void. There, flung along a multimillion mile chain the fleets of Earth waited for attack. And above him the huge rim of the Martian underside blotted the western horizon. There was the enemy; and out in space waited the fleets of Earth. It was a thrilling moment, reminding him of his

duty and responsibility, and he felt his chest swelling unbearably.

"Lieutenant Nelson," he said, quietly. "We are at war with Mars. Our orders are to remain here until further notification. I shall expect from each of my crew what Earth expects of its fleets. Obedience, unquestioning and immediate. Pass the word to the men. That is all."

NELSON'S face had lighted up with excitement. "Gosh, sir, we're in it at last." He raised a hand with the intention of slapping Corneal on the shoulder.

"Lieutenant!"

Nelson's arm snapped down to his side. "Y—yes, sir," he stuttered. Wheeling he marched away.

Corneal stood for a moment before the block house, then went back inside. The girl was staring at him, eyes blazing.

"I heard," she cried. "We're at war with Mars. You must let me free."

"You're willing to cooperate now?"

"Oh, you fool! You pitiful fool! You never asked why I was here. You never asked why twelve men and one girl would exile themselves to a miserable speck of land and choose a life bare of all comfort and security. Do you want to ask me now?"

"I am not interested," he said.

He walked to the desk and sat down. She twisted to look at him. "Untie me, you idiot. Do you hear me?"

He gave her a mirthless smile. "Quite clearly. But you are not in command."

She struggled futilely against the ropes; then collapsed breathing hard.

"You must listen to me. I know where the Martin fleet is based. I know the routes of the Martain *astrocloud* as I know the lines on my own hands. They will strike from that cover and



will be in range of earth before your fleets can stop them. You must listen to me!"

"Those decisions will be made by the Earth council. My orders are to remain here."

He went out ignoring her frantic demands to listen. For an hour he checked the *Olympiad's* fire control system and fuel chambers. He assembled the men and repeated in substance what he had told Nelson.

When he returned to the block house he knew that he had done all he could; there was nothing to do now but wait. But the girl's words had been churning in his mind.

She lifted her head when he came in; her face was strained and white.

"You must listen to me!" she cried.

"All right, I'll listen." He felt a sudden stab of sympathy for her; not for what she represented but for her as a person. There had been no reason to tie her like a wild thing; her mind and spirit were what he had sought to chain they would not be affected by the helplessness of her body.

He took a knife and cut the cords of her wrists and legs. She sat up and rubbed them to restore the circulation. Then she looked at him and said: "Do you know what it means to me to beg?"

And he knew. He knew what it would cost him to beg; and they were alike but at opposite poles. Their cores were the same hardened stuff; although they represented extremes.

"Perhaps I do," he said.

SHE looked at him for a moment and nodded her head slowly. "I believe you do. I am begging you now to listen and believe. We have been operating here from Asteroid 13 for four years. Our motives were the same as yours; love of Earth, hatred of its

enemies. But all cannot serve in the same fashion. Some must serve freely, independently, making their own decision, choosing their own means. Others must serve in uniform in the rigid mold of the Council's discipline.

"We choose to serve in our manner. We knew the trouble would come from Mars. So we learned the maze of the *astrocloud* and kept contact with the main portions of the Martian fleet. We learned their habits, their routes and we guessed at their intentions. That is all we did." She looked at him directly. "Perhaps you wondered why I didn't return your fire during our fight?"

"I thought your guns weren't working."

"They were in order. But we have never fired on the Earth emblem. We are natives of Earth and were serving as best we could, but in our own fashion. Some people must serve that way. Our crime has been in operating an unlicensed ship, stealing a few supplies from merchant craft that would never miss the little food and supplies we took."

"Your guilt is not for me to judge," Corneal said.

"But you must judge whether I'm telling the truth. For I know more than you of the Martian plan. They have developed a fleet of robot attack ships that are controlled by single guide craft. Their exit from Mars leads through the *astrocloud*; their plan of attacking Earth is based on surprise, plus the fact they cannot be followed into the *astrocloud* by Earth ships. Even your deflexive rays will be of no help in that swarm. I want to help you now. You've got to believe that I want to help."

Corneal found himself listening with mixed feelings. He believed her; but it went against every fibre of his character to ask or except assistance from

anyone who had set himself apart from the laws of Earth.

He said stiffly, "You can help by giving your pledge that you will not attempt escape. My orders will come from the Council."

"They may come too late," she cried.

"I must follow them regardless."

"Oh, you fool!" She was on her feet now, glaring at him. "You will follow pointless orders when you could take the initiative now and stop the Martin attack before it can begin."

"That is not my responsibility."

"You are sworn to fight the enemies of Earth. Must you wait until someone tells you before you strike a blow?"

There was excitement in her words, a promise of freedom and danger. It struck him so hard he trembled. It was against the principles of his life and passion. But it appealed to him with a wild power.

"What else are you thinking?" he said, and his voice was hoarse.

"There is a fighter ship here, hidden on the underside of the asteroid. We could take it and head for the *astrocloud*. I have spent years charting the orbits of its matter. I could navigate it blindfolded. When the Martian robot fleet attempts to sneak out we will attack the guide ship."

"My orders—" Corneal stopped helplessly.

"You swore an oath to defend Earth!"

"My command—"

"Give it to your lieutenant."

CORNEAL struggled. The promise she held was the lure of the Lorelei. There was excitement and danger, a man's skill and strength pitted alone against the forces of the enemy.

For a moment he stood, trembling against the force of his desire. Then

something inside him melted and the shield of duty lay shattered at his feet.

Striding to the door he called for Nelson.

"I am making a reconnaissance on the asteroid," he said crisply. "The prisoner is coming with me. You will be in command until I return."

Nelson straightened with pride. "Yes, sir."

Corneal went inside to the girl.

"You are called Mace, eh, I am Corneal. What fates threw us into this pattern I will never know. But we are going to push ahead until we learn."

The girl grinned. "Follow me, Corneal!"

THEY blasted free from the slight gravity of asteroid thirteen a half hour later. Mace was at the controls; Corneal at the guns. Their slim ship split the thin atmosphere with a hissing flash; and then they soared into black space.

Ahead of them lay Mars; and Mace set a course for the shifting vaporous *astrocloud* that hung from the underside of the red planet.

Corneal felt an elation he had not known in his life. It was a feeling of release, of sudden freedom. Beside him Mace sat straight in the pilot's seat, her sharp profile eager and alight. Corneal fingered the finger buttons and the chill touch of their plastic caps sent a shuddering life through his body.

"You are a gunner, Corneal?"

"I am a gunner, Mace."

They glanced at each other and there was something between them that moment. Corneal did not know what it was, but it was more than the bond of adventure.

And then they were slanting into the *astrocloud*. Here was the madness of space. Millions of specks of matter

caught in the whirlpool of their own gravity, churning eternally as they described eccentric orbits in parabolas that tightened and expanded with drastic swiftness. No deflexive ray would divert these swarms; no inexperienced navigator would last a second in this vortex. A miscalculation would send the ship into a gravitational spin that would either grind it into dust or cause it to be chained in a hopeless orbit for all time.

Mace knew this chaos. She had unraveled its secret, knew its eccentric order. She flashed through openings that closed together on the sparks of the jets; and spiralled from the path of crazily weaving meteor fragments with sure skill.

"You're a pilot, Mace," Corneal said.

Ahead of them was an edying pool of disintegrating matter; flashing past it they came to a clear area of quiet, the center of the malstrom.

Mace swung about in tight circles and pointed downward to a broad gap below the pool.

"The one clear path from Mars," she said.

They circled for half an hour; then another. Corneal glanced at Mace. There was a line of worry across her forehead.

Another hour went by. . . .

Then they saw the front guard of the Martin fleet flashing up from the gap. They were tiny ships, fighters, and they navigated in exact order, automatons of the void.

Another formation followed them, and still another. Following this came an immense crimson ship, of a class larger than the *Olympiad*.

"The guide craft," Mace snapped.

Corneal's hands tightened on the firing levers. "Let's get into range, Mace."

"Right," she said, easily.

THEY tipped over and went down in a streaking dive. Below them the robot ships began to break formation, rising to meet them. Corneal knew they had been seen; that the guide ship was diverting its robot ships to attack them.

An orange bolt flashed from a closing ship, missing them narrowly. Mace swerved and Corneal fired a blast as they turned. The lead ship of the robot fleet disintegrated in gleaming fire.

Corneal fired again, carefully husbanding his blasts; and another robot ship disappeared forever in the void.

Mace glanced at him as they spiralled upward in a thousand mile climb.

"You're a gunner, Corneal," she said.

Corneal was too busy to answer. The robots had followed them, were on their tail. Mace maneuvered brilliantly, falling back to reverse the positions. And each time she changed direction Corneal had a robot in his screens.

Another fleet of the tiny robots soared up to meet them, barrage fire flaming from their noses. The orange balls flashed past their screen perilously close. And one came close to sear the upper plates of their hull. Corneal saw the metal bend and blister, then snap back to its original shape; but he knew it had been weakened.

Twice Mace attempted to dive on the guide ship but each time they were intercepted.

Circling once again Corneal snapped a shot at a ship in range but his levers clicked futilely. He checked the panel quickly; they were out of ammunition.

There was no need to tell Mace. She had been watching and she saw the answer in his face.

She streaked upward outdistancing

the chasing robots. Circling again they saw the robot fleet returning to the guide craft like tiny minnows to a shark.

"They know we're out of action," she said.

"They can proceed on their mission now."

She nodded bitterly.

They watched the great fleet regroup, watched it moving again across the calm lagoon in the vortex of the *astrocloud*.

Mace turned and gazed at him levelly. "Corneal we can stop them."

He knew this, also. They were without ammunition, but they had their ship, a potential instrument of destruction. With a sharply tipped nose and hundreds of tons of weight it could be used as a harpoon—a harpoon hurled with the power generated by pulsing jet engines.

There was no need for him to answer. There was no need for discussion.

He looked into her green eyes and nodded slowly.

THE ship swung down as Mace flung it into a dive. On their screen the crimson guide craft of the Martain fleet loomed like the bulls eye of a target.

From the fleet a barrage of orange balls wafted upward; but their speed

made any accuracy impossible.

Corneal pushed his back tightly against his control seat and watched the crimson ship growing larger on the screen. There was pulsing, roaring excitement racing through his body.

This was what he had never known. He couldn't name it or know it. But it was as if his soul had broken its cage and was now soaring freely.

He glanced at Mace; and she flicked a glance at him. And in that look he knew and understood.

This was freedom. This was what Mace had known all her life. The freedom to see the right and act on her own. He had blinded himself to right and acted only on the orders of others. Some men could live that way; he had lived that way. But it was not the way he had been meant to live.

This was the way he had been meant to live. Free, reckless, above the bonds of time and duty.

He put a hand on Mace's shoulder so that she would understand.

There was nothing in the screen now but the hull of the crimson ship. He saw its luster, saw its fittings and seams.

Their speed was incredible in that last flashing instant. Corneal saw the *visi*-screen suddenly dissolve and there was a roaring in his ears.

Corneal laughed.

THE END

## ROTARY ROBOT

REMOTE control gadgets are nothing new. For the past fifty years they've been developed and refined until now they've reached the point where it is almost possible to do anything with them. The last war had a great deal to do with their practical development.

It's nice to be able to control a machine gun from a distance, either through radio or wire remote control. To do this, there must be a set of electric motors to operate the machine gun, and another set of similar things to provide the controlling forces. Well, it so happens that there are some clever arrangements for doing those things.

Naturally the simplest set-up is a bunch of relays—remote-operated switches—which in turn, shut on and off, whatever electrical motors may be necessary. But this is usually too complicated, especially for the instantaneous actions necessary with something like a gun.

So, the *selsyn* (from "self-synchronous") was invented. This consists of a pair of electric motors, whose fields and armatures are connected in such a way, that the rotation—by hand, let's say—of one armature, causes the other armature to rotate exactly the same amount! Of course, how this thing functions is rather complex and detailed. It is a

matter of proper "current phasing," etc. The point is that it works perfectly. General Electric went even further with the selsyn.

A selsyn by itself is a comparatively weak element. It requires something to boost it. G.E. developed the "amplidyne," which is effectively an amplifying selsyn. This means that the weak forces at the control point become, through the intervention of powerful electric currents, great forces at the operating end. Thus, a gigantic rudder may be turned by the flick of a finger, or a gun turret in a plane going five hundred miles an hour may be operated against terrific wind pressure.

The selsyn and its stronger brothers and sisters are perfect examples of present day robots. But robots are not limited to such spectacular things as machine tools and airplanes.

Most homes that have automatic heating controls are in effect robot-equipped. The thermostat is one side of the selsyn, the blower motor the other. A signal conveyed by the thermostat to the blower motor brings the system into the equilibrium called for by the state of the heat.

**F**REQUENTLY it is said that in an improperly designed remote control system, there will be

the tendency for the set-up to "hunt." This means in the case of the preceding example, that the temperature will overshoot. The house will then cool off and the thermostat will call for more heat. But by the time the signal has returned to the thermostat, the house has become excessively hot because too much heat was poured into the system to begin with. Our robot has goofed-up. He has been over-zealous in his job.

The same thing can occur with the rotating selsyn system. The selsyn will oscillate about itself without directly gaining its objective. By the time that this is overcome, the purpose for which it has been functioning will have been lost.

This, of course, cannot be permitted. Usually there isn't time for a second chance. There are ways for compensating for this sort of thing. In the case of a home thermostat, it is only necessary to insert a little heating element which causes the thermostat to open up a little before the desired room temperature is reached. Then the house "coasts" up to the desired temperature and not over it.

And so it goes. When an actual robot of the science fiction variety is finally developed—and it will be—selsyn will make up its nerves and amplidynes will be its muscles!

## BLAST FURNACE BOOSTER

**A** REVOLUTION is coming in the American metallurgical industries, a revolution that has no precedent since Bessemer invented his converter. The three major elements in the iron and steel industry are three machines, commonly called furnaces. They are the blast furnace, the open hearth furnace and the Bessemer converter. The first device makes pig iron and the second two take the pig iron and convert it into steel. They differ radically in construction but they have one thing in common. They use vast quantities of air.

The blast furnace takes in coke and iron ore and air and produces pig iron. The open hearth furnace takes in gas and pig iron and air and produces steel. The Bessemer converter takes in molten pig iron and air and produces steel. In all three cases, air is one of the vital elements. The air is blown through the furnaces for one purpose—it contains oxygen and oxygen supports combustion. However, along with the oxygen, air contains fourth-fifths nitrogen, an inert gas which does nothing in the reaction except to interfere with it, because it takes up enormous amounts of heat which serves no useful function. Steel-making would be easier and steel would be cheaper if there were some way to obtain pure oxygen at a low cost. Liquid oxygen at present costs about seventy-five dollars a ton. It is out of the question to use this at this cost. Ordinary oxygen in gaseous form is naturally obtained from liquid oxygen.

American scientists were sent into Germany immediately after the ending of the war with the express intent of dragging from the Germans any

and all industrial secrets they may have had. And they made some pretty rich hauls. For one thing, to their astonishment, they came upon several steel-making plants that were blowing pure oxygen through their furnaces instead of air! And they were obtaining this oxygen from liquid air. The liquid air plants were what interested the Americans. Once they had the oxygen they could easily apply it to our own furnaces. They discovered that the Germans were making liquid oxygen from air for about *two dollars* per ton—cheaply enough to use in steel work.

Immediately a plant for the purpose was transferred to this country and with characteristic American energy, this factory was studied, analyzed, taken apart and improved in no time at all. It won't be long before a lot of metallurgical plants will be using this new process. In fact a number of steel mills are already equipped with the necessary machinery. If it is adopted on a large scale, the cost of steel will be a lot less—and consequently so will a lot of other things.

Liquid oxygen is made by compressing air to a very high pressure in huge water-cooled air compressors. The air goes through many stages of compression. By allowing some of the highly compressed air to escape around the rest of the air, its temperature is lowered still further until finally a bluish-white liquid is obtained which is liquid air. To get rid of the inert nitrogen which constitutes four-fifths of the liquid, it is allowed to evaporate because its boiling point is higher than that of oxygen. The net result is that a pure liquid is obtained which is liquid oxygen.

(Concluded on page 105)



# THAT WE MAY RISE AGAIN...

by CHARLES RECOUR

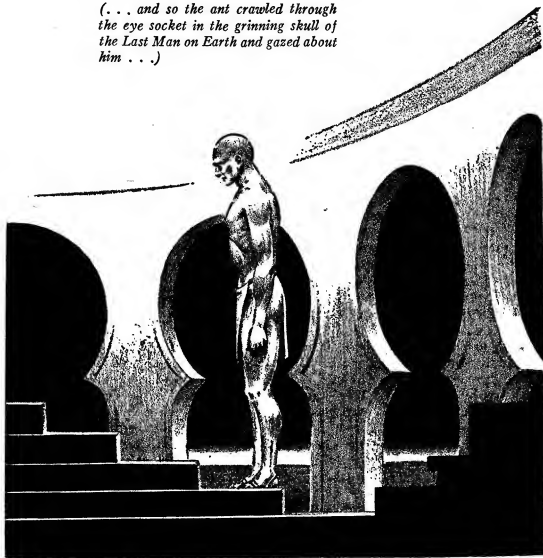
THE wind whispered softly across the barren plains to the South and small eddies of dust whirled behind its path. Quietly it brushed across the figure on the bluff. It was cold and dry and its soft rustle was the rustle of the night wind everywhere. For a million years it had repeated its nightly cycle and it would do the same for a million more.

The figure on the cliff shivered as the wind caressed it. Reflexively it drew

its cloak of transparent *klar* about it, but its shivering did not cease. Its proud head still stared at the millions of twinkling lights overhead, the stars' brilliance intensified by the thin air.

Kothan was not cold; he was not even aware of the biting air about him. Kothan was a Man, a thinking, living, breathing Man, an anachronism in a modern world. His mind was a kaleidescopic tumult of disjointed thought as it always was when he left The Abode

*(. . . and so the ant crawled through the eye socket in the grinning skull of the Last Man on Earth and gazed about him . . .)*



to breathe real air and to gaze into the night sky. Every night for his brief hour, he left the tomb-like mustiness of the Libraries to relive for a short moment the dream which he knew must have once been reality.

The sum of all things was not The Abode nor its inhabitants, the Master-Ants. Even Kothan's Master-Ant had concurred in that thought when he had caught the overtone and had admonished Kothan gently but firmly. But these nightly sessions would not be denied and Kothan imagined for a brief moment that he and his kind, the pitiful few, were possessors of their rightful heritage. The taste of the cool air, the feel of it against his face, the sight of the glowing glory above him, reminded him each time that he was a Man.

His trembling was the natural shudder of distaste that he felt at the thought of the state to which he and his fellows had been reduced. These thoughtful night sessions were not good for him—and yet they were. More and more his dissatisfaction arose, and yet he went back each time to The Abode with a curious sense of completeness, almost one of lassitude. His sleeps were less troubled. And so he knew he would do this endlessly until his Master-Ant, Ameise, would send his aged and useless body to the Biological Laboratories.

But now he felt young and good and though there was no purpose to his living, it was good to be alive. There was no point to existence but it was good to be aware of being.

One last lingering look at the stars, a deep breath, the last kiss of the wind on his cheek and Kothan turned away. His face distorted in wry and bitter smile, he lifted his smooth-shaven head, squared his lithe shoulders and trod lightly back to The Abode, its entrance marked by a small light. The three hun-

dred meter walk gave him a few moments to collect his thoughts, to rearrange his mind in its customary pattern of servility and the sense of being less than nothing swept over him again like an ever-recurring pall.

The flat-roofed metallic structure loomed before him, outlined faintly against the sky, the light looking like another star. Kothan pressed the button on the smooth-surfaced wall and the cavernous door slid silently aside to allow him to step on the huge platform which served as an elevator for the Master-Ants. The sliding door closed behind him, there was the subtle hum of mechanisms as he operated the elevator controls and the machine took him quickly to the Ninth Level.

The corridors of The Abode were as deserted as usual and going to Ameise's resting quarters, Kothan encountered no one. There was no sound from the shops or laboratories for this was the rest period for the Master-Ants and nothing must disturb them. Even Ameise would change his tolerant nature if disturbed while resting.

Kothan's nerves this night were not as calm as usual. There was an electric something in the air and sensitized to the Master-Ants' telepathic communication as he was, he could not help but feel the unusual.

The light was on in Ameise's Place! Kothan raced toward the entrance opening on the corridor. Perhaps the Master-Ant wanted him. Perhaps he had not fed the power cells properly. A thousand possible errors raced through his mind. His nerves tingled. He dreaded facing Ameise's wrath. Only once before had he offended his Master-Ant and the punishment he had undergone still made him writhe in retrospect.

QUICKLY he slid aside the panel to the Place, at the same time flipping



his *klar* covering on a convenient hook within its niche. Wearing nothing but the customary loin-cloth and sandals of the Man, he entered the chamber of Ameise, the Master-Ant.

Humbly he stood before the inheritor of the Earth.

"Yes Kothan, I do wish to see you now," the Master-Ant's thought answered him even as his own question formed in his mind. The sinuous antennae protruding from the chitinous holes in the monstrous ant's head waved gently almost as if to caress Kothan. The four meter body of the gigantic creature reclined before a low desk covered with film and papers. The jointed tentacular arms went on with their indescribable writing and recording as a separate compartment of Ameise's vast brain conversed with Kothan.

The steel-hard chitinous body-structure scraped awkwardly against the metal floor of the Place as Ameise moved and the sound tortured Kothan's ears. But outwardly Kothan concealed his slightest revulsion. He had been dealing too long to feel any pain.

"Kothan," Ameise's thoughts infiltrated his mind in verbal equivocants, "we have decided to launch the Rocket." There were no preliminaries, just crisp scientific statements of facts. All Kothan knew of the "we" was the monstrous Mutual-Mind on the top level, a vast brain encased in a chitinous case whose function was to coordinate the efforts of the Master-Ants in their Abodes all over the Earth, a vast, thinking transmitter of telepathed radiations.

"That cylinder," Ameise went on interrupted by Kothan's speculations, "resting above The Abode on the Outside is a Rocket, a machine propelled by ejecting a portion of its mass at high velocities. Do you know what a rocket is, Kothan?"

"I do, Master, from my reading in the Libraries," said Kothan, "There were such machines in existence before the Great Change so long ago, the Books say, and they explain how they work. But they were no longer used after the change, I think."

"You are right," said Ameise, his antennae weaving their meaningless pattern, "There were such things before the Change. Man made them for warfare with his kind, but We are going to use them for research. The Mutual-Mind desires us to make first an inter-Lunar exploration and then perhaps an interplanetary one. Can you imagine that, Little One?"

"Oh yes," came back Kothan's breathless answer and his brain burst with the thought of going to the sky on which he had so longingly, so often gazed. And the sobering thought came to him that his kind, that Man, once had these machines and with them had destroyed himself.

Ameise caught the thought at once and Kothan felt almost a twinge of pity for him. Then Kothan felt contempt for himself that he would take pity from such an alien thing. But he guarded the thought, so successfully that even clever Ameise did not catch it to become angry.

"You will not need imagination for this scientific study," Ameise's thoughts came to him again. "You are going to operate the machine. You will control it to a degree. The Mutual-Mind has suggested a Man for the purpose. Our technology does not yet permit Us to build a large rocket, nor to use anything but gaseous fuels, Kothan. So We are going to equip the Rocket with remote-vision instruments to send their sights to Us. I was told to provide a competent technician to do the fine-guiding—that is where you will be used. While We can control the Rocket by electro-

magnetic radiations over such great distances, visual guidance is necessary to make the flight's success assured. I know you to be a disturbed Man, but I also know you to be far more intelligent than any others of your kind that I have seen.

Therefore with the approval of the Mutual-Mind, you will take the journey. It will occur after this rest period. I need not tell you this is the greatest opportunity that a Man—for an instant Kothan thought he caught "or a Master-Ant"—can ever obtain. You are going into space where no Master-Ants have ever gone. How do you feel?"

KOTHAN knew that his feelings mattered not an iota to Ameise, but his jubilation could not be denied.

"I am so grateful, Master, that I can say little. I am proud. I am honored. I shall do my best." The words poured furiously from him. He forgot for the moment that audible speech wasn't necessary.

"There is no training needed by you," went on Ameise, the Master-Ant, a subtle hint of pride in his thought," for the Rocket has been so carefully designed that all you need to do is watch a dot of light on a set of cross-hairs. All else has been taken care of. Now you will leave me for the rest of the period, do as you wish and then you will report during the next work-session—at its beginning—to the Mutual Mind on the level number One. We will guide you from there."

The interview terminated, Ameise, the Master-Ant relaxed his chitinous bulk, sank to the floor with the irritating scrapings of his kind and slumbered in preparation for the launching of the Rocket.

Kothan flipped the light-switch to darkness, and stumbled half-dazed from Ameise's Place, his mind a confused

mixture of awe, wonder, horror and shock. But above all, pride and joy that he was to be the guider of the flight. He—only a Man—he arrested the thought before it began. He was a Man and it was his right to assert his glory. Wasn't the Earth the property of Man once? The books in the Library said that Man was the measure of all things, that he was great in his glory and that the Master-Ants were mutant irritations that had been Man-made. He only half-believed this, but it was a stirring thought regardless.

He was too excited to sleep. There was only one thing for him to do. He turned his steps toward the Library. Ameise, his Master-Ant had permitted him to use the Library as his own. It was crammed with film and papers—books that were becoming brittle with age except for the few metal-leaved ones. The large room was unlit as he entered it and he bent down to reach the switch.

His hand touched something soft and warm; it was alive. Before he could throw on the switch and before the creature escaped he threw his arms around it and dragged it up. Still grasping it firmly with his right hand and ignoring its muffled cries against his shoulder, he managed to flip the switch. Light flooded the room. Kothan looked down.

It was a girl. She struggled furiously to wrest herself from his grasp. There was fear and terror in her doe-like eyes, but an anger and pride too. But Kothan was infinitely stronger. She had made no loud outcry and for this he was respectful.

"Don't shout," he said to her, "I will not harm you. My name is Kothan and I am the servant of Ameise, the Master-Ant. What and you?" His grasp loosened on her. But he felt the strangest of sensations. He had never held a

female, a woman, in his arms before though he knew what they were. He had never encountered any—no one at all. The softness of her body against him, the feel of her flesh on his, the tickling and fragrance of her hair in his nose, the warmth of her and the pleasant woman-scent, were overwhelming him with emotion he did not understand.

His knowledge of this strangely stirring creature came only from the books he had read. He knew that they existed in his time because occasionally Ameise's thought-radiations wandered learnedly and academically to technical visions of the Breeding Chambers. No whisper of their real nature came to him from this source. Ameise's vast and alien intelligence could not communicate any hint of the subtleties that Kothan felt now.

Under the impelling of the mingled feelings of surprise and wonder, Kothan released the woman. She stepped back.

"You are a Man," she said, "I have read about you in the Library on the Tenth Level. Verhirm allows me there any time I wish."

Her speech was slow and thoughtful. Except for talking to herself, much as had Kothan, she had had no need for conversation.

"Why have you not come here before?" asked Kothan.

"Verhirm only told me about this Library now. I did not know there were any others. I have always gone to the one on my Level. I found this was the same as mine. That is why I slept when you first came." The terror had gone from her and Kothan could see that something was stirring her as much as he. He knew without asking that Verhirm was a Master-Ant too, but he had always thought women were used only in the Breeding Chamber.

SHE threw back her long hair, its blondeness shimmering in the strong light. The graceful gesture sent Kothan's pulses racing. She smiled and it was the first time that Kothan had ever seen another human smile. His own face answered. He felt better than he had ever felt before. There was some magic to this woman. He had to talk with her and tell her of his honor. For the first time in all his years in The Abode, he felt happy. He did not recognize the sensation, but he knew he enjoyed it.

Without being aware of any compulsion, he reached out and tenderly took her hand. She did not withdraw it.

"I am Nayleen," she said. "I have never talked with anyone before. I have always worked for Verhirm and he has not treated me cruelly. Look at how he lets me go to the Libraries. He wouldn't want me to meet a Man. I will go now."

"Don't go!" The words burst from Kothan automatically. "Please stay and talk with me. Ameise has never told me I musn't talk with you. I want to talk so much with you. I want to tell you about me. Don't you want to stay?"

"Yes," she whispered, "I want to stay and talk with you too, but I am afraid. Why should we do this? This is not the time before the Great Change."

"You know about the Great Change?" Kothan half-stated, half-asked. "Once this was a world with Man above all, did you know that too, Nayleen?"

"I know that," she said, her voice low, her hand still in Kothan's, "but what has that to do with now?"

Kothan did not answer at once. He looked at her slowly, his racing heart had calmed itself and something like a great peace of mind was beginning to descend over him. There was the stir-

ring within him of something he could not understand, some strange blend of reason and emotion, that linked itself crazily, with Nayleen, glory, pride, and his feelings for the greatness that was Man. . . .

He started speaking. The words tumbled from him slowly at first. Then they raced out in a torrent. All the pent-up feeling to which he had succumbed during his lonely vigils on the bluff, was released. He was talking with another of the once-mighty race of Man!

No noise, no creature disturbed them. The Master-Ants slept. And Kothan and Nayleen talked. As he spoke, her eyes took on the same transfiguration as his. While the language poured from his lips, they crept closer to each other. They did not know why. It was enough to sit near each other in the circle of their arms and empty their minds of the accumulated thoughts of socialless decades.

Kothan told her not of his service to Ameise, nor of the Laboratories, but of himself. He told her how he had spent the years in this very room, how he had learned to read in the Books. He told her how he had read of the World before the Great Change and how Man had been the ruler. And her husky vibrant voice replied with knowledge of her own. She knew that before the Great Change, Man and his kind had not been slaves and tools of the Master-Ants. So far as she understood Man had made the Master-Ant, by some force. Neither understood the causes for the Great Change, except that Man destroying Man had initiated it.

He told Nayleen of the forces that seized him when he stood beneath the stars and breathed the thin air. The majesty and impressiveness of the natural scene moved him far more then, than the thought of the Mutual-Mind,

that gigantic convolution of thought linked to chitinous matter, who controlled the Master-Ants and all of the World. Through the magic of his inspired talk he made her understand that he felt then such a dignity and pride that transcended all the horror of the living humility that was their futile lives.

AND Nayleen answered him. She had never left The Abode but she sensed his meaning. The conception that they were tools, pieces of equipment to be used by the Master-Ants was galling. They were never abused, never hurt, always warm and always well taken care of. The shuddering horror was the indignity. Without the Libraries they would not have even considered the thoughts they so rapidly exchanged.

And so for hours the interchange went on. Time passed in The Abode, while slowly in the back of Kothan's mind came the realization that he was feeling for Nayleen such a tenderness as the Books hinted existed between Men and Women.

Then Kothan did a strange thing. Not for ten thousand eons had such a thing occurred in The Abode.

His arms closed around Nayleen's slender form and he kissed her. As his lips touched hers, he knew that all of his living before was to be changed. This was his destiny. This Woman must never leave him and he must always have her with him. It could be no other way.

Nayleen clung to him fiercely. In spite of her reading in the Library, she, no more than he, had any realization of what was occurring. She wanted Kothan. She had to have Kothan. And he her.

In their fierce ambrace The Abode was forgotten. In the scent of each other, in the caress of their arms, in

the magic of their feelings, the Master-Ants, the Mutual Mind—and in Kothan's mind, the Rocket—were forgotten. Only the two of them mattered.

Nature, abandoned for a thousand millenia, asserted her inalienable and immutable laws. There was no denial. It had to be. Kothan and Nayleen, anachronistic, harmless creatures in the universe of the Mutual-Mind-inherited their birthright.

After a time, Kothan disengaged himself gently from Nayleen's arms. He moved away from her. His head went down and he buried his face in his arms. Nayleen crept to him.

"What is wrong, Kothan?" she asked softly, wanting to use a thousand endearments and knowing none. "Why do you think so sadly? Are we not together? Will we not be together again and again?"

He looked up, his face angry. The sadness was masked by his first fury.

"No, we will not be together for a time. Perhaps never. I did not tell you the greatest thing that happened to me before we met. Before this, only a little while ago, Ameise called me and told me that he and the Mutual-Mind had picked me to guide a Rocket. I wanted to do it more than anything else—until now."

It wasn't necessary for him to tell her that only he could go. The Master-Ant would not recognize emotion, or the hunger for kind for kind. From the little Kothan knew of the slim projectile poised above The Abode through what Ameise had told him, it was to be controlled by one Man, and the scientific objectivity of the Master-Ants left no room for understanding the trivia of their servants.

"I know what a Rocket is, Kothan," Nayleen said, "and I know what it must mean to you. The Books said that the ancients had them and they

could go high into the air. They destroyed each other with them. Why do the Master-Ants want Rockets? They have no one to fight with. They are masters of all the Earth."

"They want to televize images of the Moon for scientific study. And I am to supplement their automatic controls which are not completely perfected. I wanted to go into space and see what Man must have seen before me." He frowned. "Not even the Master-Ants can do that yet. But they will some time."

Nayleen took his head in her arms. Gently she bent down and kissed him. She ran her smooth hands over his face and through his hair.

"Oh, Kothan, must we live this lie always. Must we give up our happiness with each other? Can we not guide the Rocket together?" she asked half aloud.

HE PREVENTED her from asking any other questions with his mouth. Then he drew away, his face a mask of lines. For minutes he stared into space, his mind a seething mass of confused emotions and thought.

Kothan was intelligent. His ratiocinations were eminently sound and reasonable and he knew that certain events were to take place in short order. He would leave Nayleen. During the next few Work-times he would guide the Rocket. He would return to serve Ameise. He would visit the Library. He would see Nayleen for a few times or many times depending on how soon his or her thoughts filtered through to their Master-Ants in an unguarded moment. They would then be allowed to see each other no longer. And eventually they would grow old and die. That was their destiny and Kothan knew it. Its acceptance by both of them was a matter of course. Nothing in the uni-

verse could change. It was so ordained by the Master-Ants and so it would be.

Nayleen knew something had happened in that moment. The blank stare left Kothan's face, and for a moment he looked as if he had seen a thunderous vision. The events of the Rest period, his meeting with Nayleen—all these were nothing before the engulfing thought that came to him.

"We are of the race of Man," he said solemnly, taking Nayleen in his arms. Before he said it, she knew what he was going to say.

"Yes, Kothan, I will," she answered the unspoken thought. "Death is not a bad thing—it is good."

\* \* \*

The corridors of The Abode had never seen Man trod them other than one at a time, but this Rest period, for the first time in a thousand times a thousand centuries, two humans walked the Earth together. Skimpily covered by their *klars*, the cloaks flapping around them, they strode down the corridor to the elevator together, heads erect. Their pride was matched only by the length of their strides and no alien disturbed them. The Earth was Mans.

Silently the mechanism carried Kothan and Nayleen from the Ninth Level to the first. Automatically it decelerated to a stop. Kothan touched the button and the panel swept open, closing on their backs as they left the exit.

Overhead the stars had changed their course but the pattern was the same. Kothan looked up and pointed. Nayleen knew the surface only through the Library, but she nodded as his joy communicated itself to her. For a moment they held the pose. Two tiny human beings star-lighted by the vivid back drop of the stellar picture. The soft cool wind still sighed across the plains below them and the tug of its eddies

against their cloaks sent thrills through them.

For minutes they gazed at the vast panorama of Nature unfolded before their eyes. Kothan took Nayleen in his arms and gently kissed her. Then he released her and they both turned around. On the flat metallic roof of The Abode, pointing like a huge finger to the sky, stood the Rocket. Projectile-shaped its slim bulk blotted out the stars behind it as if to say in defiance "I am the handiwork of the Master-Ant!"

Kothan and Nayleen studied its outline, but their minds were less on it than the sleeping monstrous thing below it. Not half a meter below the base of the Rocket shielded from its rear blast by a thin layer of stone and metal was the hideous chitin-encased mutant that represented the ultimimate evolution of the Master-Ants.

For a hundred centuries this creature had lain in The Abode, directing the lesser minds of the Master-Ants. Employing them as a brain would employ its separate cells, the Mutual-Mind reached out with tentacular thoughts and manipulated its lesser members like Ameise and Verhirm manipulated their human servants. Operating under the handicap of their great bulk, the Master-Ants used the humans as machines, and in turn they were used by the Mutual-Mind, the immobile penultimate. For Ameise and Verhirm and the hundreds of thousand others of their ilk, this was honor. They were a part of the Master plan and to be a part of the Mutual-Mind was their destiny.

"We must not delay too long," Kothan said to Nayleen as he took her arm and prepared to lift her the short distance to the top of the vast roof of The Abode. "We will never be able to enter the Rocket if the Mutual-Mind senses our presence. I hope the metal

will act as a shield. Even Ameise never caught my thoughts here on the Outside."

"I'm ready," Nayleen said, "As long as we're together nothing can harm us." She looked at him with longing and poignancy.

The two of them scrambled to the roof's surface and approached the Rocket. Kothan knew nothing of its operation, but the discussion with Ameise had made its entrance clear to him. He had no fear that he would not be able to make it operate. The Master-Ants, accustomed to dealing with the limited mentalities of humans, would have undoubtedly simplified the machine. Most things in The Abode were so designed.

This close to the Rocket, it was even more imposing than either Kothan or Nayleen had first imagined. It was constructed of a gleaming alloy of diamond hardness to resist the stress of flight. Cast in the incredible workshops of The Abode, it was a single rigid structure with a shell that could not be distorted by any but the most inconceivable forces. It rose thirty meters into the thin night air from its transparent tip to end of the huge single tube that constituted its base.

A tenth as wide as it was long, no protuberances marred its perfect surface. Like a bullet from the foundries of the gods, it was the Earth's most perfect projectile.

As Kothan and Nayleen walked slowly around its base, awed in spite of their new-found heritage and because of the ancient training so thoroughly ingrained, they spotted almost simultaneously the source of egress. Not two meters from the base, was a slim almost undetectable circle—the outline of a door. And on its circumference was a button.

KOTHAN hoisted Nayleen to his shoulders and by the gentle pressure of her fingers on the button, the door swung to reveal a vertical bar-studded climbing tube leading to the control chamber in the nose. Cleverly the Master-Ants had provided an entrance and a place for the examination of the motors at the same time, without the necessity of weakening the major portion of the shell.

For a moment, as Nayleen disappeared into the interior of the Rocket, Kothan felt a pang of loneliness, as if she had vanished. He gathered his courage. He had committed himself to this glorious venture. There was no returning. Jumping up he caught the edge of the entrance and drew himself up.

"Close the port," Nayleen told him, even as he reached for the door.

"You go up and I'll follow." Kothan said. "Be careful. There may be a control sticking out somewhere."

"I will. Come."

Quickly they made the thirty meter climb coming out at the top of the tube leading into the control room. Everything was in darkness, and the only light was that afforded by the glittering canopy of stars beaming feebly through the transparent tip of the Rocket. Nayleen huddled close to Kothan fearful of disturbing anything and cautiously Kothan felt around him. In a little while their eyes became accustomed to the darkness and they could make out their surroundings. The control cabin was two meters high, its transparent dome giving them complete visibility. Even before they attempted to examine the controls they looked about them. The sight from the vantage point of the height of the Rocket, was breathtaking. Below them was the flat surface of the roof of The Abode. To one side of it was the exit and a few hundred

meters to the South was the bluff which overlooked the desert beyond. How often had Kothan stood there and communed with that which was beyond him, but which was now a part of him.

More impressive than this was the eternal-star canopy above, and more impressive than both was the realization in each of their minds that they were resting above that super-intelligence, the Mutual-Mind. What alien thoughts were slithering through that chitin-decked parody of a brain? What monstrous thoughts would he be thinking a few moments hence when the Rocket, his proudest creation, left without his knowledge.

Nayleen shivered, and Kothan drew her close. "Don't be afraid now, Nayleen," he said, "It won't be long."

"I'm not afraid—it's just that—that—thing below," she answered tremblingly. Nayleen voiced unknown endearments mentally, as Kothan did—no one—not even the Books—had told them of love.

They explored the small control room. It was barren except for the most obvious and rudimentary devices. A couch-like bed, heavily padded lay on the Rocket's axis. At its head was a viewing plate, marked with cross-hairs. Kothan knew he would have no use for this. Below it were four levers clearly marked to indicate direction and power controls. The acceleration-couch was equipped with padded arms to gather the guide who lay there into them.

Kothan and Nayleen climbed into the couch. Pressed closely together there was room for the two of them. Kothan touched the stud that closed the arms, and the two of them were pressed into each other's embrace. Though they were vertical now, they knew that soon that word would have no meaning.

Kothan disengaged his arms from

around Nayleen. "Cling to *me*," he said, "I will need you"—again the unspoken and unknown endearment—"and faith."

The firm resolve that moved him changed his face to a grim mask, and yet there was happiness there. Nayleen pressed to him. "Let us not wait any longer. Can you work the machine?"

Kothan did not answer. Instead he pulled one lever toward him. From within the bowels of the Rocket there came the answering click of relays and a soft hiss as the fuel left the tanks. A gasp, a cough, a roar—and the Rocket moved!

KOTHAN and Nayleen felt the gentle tug of weight against their feet as the Rocket rose gradually. Delicately it poised on its needle of flame and as the volume of fuel pour into its chambers, the two humans felt the increasing force that comes with changing velocity. In an instant the velocity began its ever-increasing change and as the flame took hold, Kothan's senses whirled. The Abode fell away so rapidly that he almost lost his perspective but his new-found purpose steadied him and his hand touched one of the controls and moved it slightly. He felt Nayleen stir against him. He looked down. There was a smile on her face. . . .

Beneath them, the slumbering Mutual-Mind felt the vibration above it, and all its multi-senses came into play. A hundredth of a second after it felt the tremor, it had constructed exactly what had happened. Its mental tentacles had probed Ameise's brain-case, sought out Verhira and rebuilt the necessary course their servants had taken.

That anger should grip it was impossible. In its alien sensitivity there was no understanding of emotion, as humans knew it. There was disbelief,



the vaguest sort of a sense of loss—but above all, scientific objectivity retained its hold. With detached curiosity, unmoving, the hideous bulk of brain-tissue cased in chitin followed the course of the Rocket. It saw it rise. It saw it float momentarily on a jet of flame—then abruptly accelerate. None of these things surprised it for it knew that that was what it had been built to do exactly.

The Mutual-Mind saw the Rocket climb a thousand meters, another thousand meters, and still another. Then it knew that the guiding intelligences within the projectile were failing to control it.

The Mutual-Mind had this belief for only a fraction of a second before it understood that the Rocket, the final product of its profound thought, was under the very conscious control of its occupants. Helplessly it watched—still unangered—still fascinated as the Rocket rose gracefully and started to curve in its course. More the curvature increased until the Rocket was heading toward the Roof of the Abode with gigantic speed as acceleration piled velocity upon velocity on its course.

Helplessly the Mutual-Mind watched, mentally making abstruse calculations, living vicariously within the Rocket, knowing with a calm and implacable certainty that Kothan and Nayleen were the instruments that were to bring it the greatest experiment of all—death. . . .

Kothan was seized in the grip of the

terrible acceleration and as the blood drained from his head, it was all he could do to keep the nose of the Rocket centered on his objective. Pain wracked him and he knew the lovely thing beside him had long since lost consciousness. On her face was a smile of satisfaction and happiness—she was with him. That knowledge alone ameliorated the agony of the tremendous acceleration. But it was only a part of the whole. He knew that he had risen above the Master-Ants. He only dimly suspected the thoughts that coursed through the Monster's brain, but suspicion of those was enough.

This was the culmination of his life. In the last twenty-four hours, he had vindicated Man's belief in his own dignity. The thought still amazed him, that he, after the agonies of doubt and self-torture on the bluff, should have this intense happiness. To give up Nayleen was bad, but to rise to the stars with her was good.

Every muscle strained to hold the Rocket on its course. There seemed to be no time. Was this to last forever? Duration and instantaneousness merged into one. A tremendous song surged through him. This was the rebirth! This was life! This was happiness! This was death!

The last thing that Kothan saw before the Rocket struck the roof of The Abode and penetrated the consciousness of the Mutual-Mind, was the vaguest peep of sunlight from the dim solar orb through the veil of the stars. . . .

## BLAST FURNACE BOOSTER *(Continued from page 93)*

If this material had to be transported anywhere of course it would be impracticable for it to be used in such mass production operations as manufacturing steel. But, because it is used on the spot, the plants are a part of the steel mill.

Actually, all the Americans discovered, was that the process used for making the liquid oxygen, differed only in a matter of degree from that used previously. The same tactics as were

used before were used here except that they were refined to a considerable extent. A lot is going to be heard about this process.

To prepare the liquid oxygen for the furnace all that need be done is to allow it to evaporate and then blow it into the furnaces. This is a simple matter. The furnace temperatures grow much hotter, the steel becomes much purer and steel making is simplified.



# In All Probability

by Irving Gerson

**What are the possibilities inherent in each event? If you could know, and take a different route, what would be the result?**

THE room itself was commonplace. It contained the usual four walls, two windows, and several doors leading to the ordinary places doors ordinarily lead to. Covering two of the walls were long high rows of shelves filled with books—small, thin pamphlets, corpulent, puffed-out handbooks numbered from page 1 to 2023 proudly displaying their contents between two worn simulated-leather covers as well as majestic reference and research treatises, these latter carefully stacked by loving hands into even rows, their backs tangent to an invisible straight line. Yet none of this was enough to arouse curiosity in any casual spectator. No, by sheer ordinariness, these surroundings almost projected the complex apparatus at the far end of the room into one's eyes. There was a screen which might have been part of a television unit; it was mounted on a panel. The panel was on a metallic, gadget-covered hemisphere. Scattered over the panel were switches, meters, electrical jacks, plugs, and valves—and at the bottom of the hemisphere, two cables. One of these ended as a slack, rubber-covered line dangling over a heavy chair; the other was attached to a two-foot metal cube which was itself imbedded partially into a block of concrete.

To the individual seated at a desk in the adjacent corner, the apparatus did not look unintelligible. He had designed and fabricated it. His middle-aged, tired face belied his years. He was thirty-six and looked forty-six. His appearance was that of a high school teacher who had spent twenty years trying to teach the science of economics to pupils who had just discovered biology. But his external quiescence could not fully clothe the tremendous excitement seething volcanically within him. He was, at the moment, concluding his description of the experiment to be performed with the devices previously described.

*(To clarify that which follows, it might be wise to insert a few passages from that description. These give a synopsis of the theoretical considerations underlying the experiment.—Ed.)*

Questions:

- 1) Is Time, then, also a function of Energy? According to my theoretical and mathematical experiments, it is.
- 2) Is our present existence in our Or are we a portion of an infinite time a fundamental principle? series of probable existences, all

of which can be referred to various time orbits? If the latter, our time level may be considered as the most probable of this infinite series, (since energy flows through the path of least resistance) due to our requiring the least amount of Time-Energy. All other probabilities must then, require more energy, and thus are less probable.

#### Summary:

If these assumptions are granted, these questions affirmed, the problem existing is merely the method of attaining enough energy to shift a body (in this case, mine) from a more probable time orbit (or my own existence) to a lesser.

The amount of energy required is enormous, and cannot be attained by any normal process. We thus have a second problem: the fabrication of a reservoir to store potential Time-Energy that may be withdrawn as needed. This is analogous to an electric storage battery.

This reservoir is unique in its design as well as in its function. I am proud of it as well as of the method I have invented for translating fourth-dimensional radiation into vibrational patterns that may be reproduced upon a screen.

**H**AVING finished his description, Dr. Quest arose and moved to the chair disengaged the cable from it, and seated himself. He leaned over the panel, set various switches and gauges at obviously pre-determined positions, then pulled several rods from the block of concrete. He manipulated various controls on the metal cube, and . . . waited.

After a short pause, he engaged the cable to a plug on the chair, fastened a strap-like harness to his waist and arms, and slowly reached to the panel, breathing heavily, and switched the one large knob-like control lever partially down a slot to a position marked "P-5."

There was, for an instant, a horribly undecided glow at the edges of the screen, and then—as he gasped harshly—a brilliant green flare of light over its entire surface! The blur of phosphorescent light was not of even intensity; it disclosed cloudy suggestions of motion at some portions of the viewer, and a thinning at others. With a cautious turn of the sensitivity knob, Dr. Quest saw a trend toward coalescence within the screen. Then, as though an invisible chemist had destroyed the equilibrium of a colloidal suspension, distinct forms were precipitated into view as particulate masses.

The screen was filled with a rectangular room, complete with walls, doors, and the ordinary appurtenances of the ordinary room, save for the long rows of books on two of the walls. He saw his apparatus almost completely duplicated, save for the existence of a third cable from the hemisphere, where his equipment possessed only two. He saw, unbelievably but undeniably, himself—seated at a screen upon which another duplicate was pictured, its screen again mirroring replicate copies—himself, again and again and again, ad infinitum!

But this second self pictured on the screen had no air of amazement, no look of shock. His was rather a somber gaze, one of apprehension and sorrow, as he picked up what apparently was a previously prepared black-board containing, on its surface, these words:

"Destroy your apparatus quickly, or you will destroy yourself."

Dr. Q1, amazed at this surprising message, vehemently shook his head negatively, then mouthed the word, "Why?" At this, Q2 erased his blackboard, and quickly scribbled, "Your energy source too small—your reservoir not grounded—you are now the source, and are being drained of life-energy!"

Q1 quickly checked his gauges, and discovered that, although low, they showed a satisfied energy demand. He next opened the switch from the reservoir, *but there was still energy flowing into the apparatus!* As he gazed, stunned, he observed Q2 again holding his board to the screen. It stated, "Disconnect cable from your harness, and leave apparatus—hope it's not too late!"

With a speed born of desperate fear, Q1 tore off his harness, ran to the opposite corner of the room, and collapsed on a chair. His vision wavering, he looked at the viewer—still alight, still operating on whatever potential remained in the reservoir. As he sat, Q2, writing, erasing, writing again, sent this across a gulf of extra-dimensional time:

"I am the sole survivor of three of Ourselves, experimenting on three different probability orbits. What was a successful experiment for me, was an improbability for the others—and they died to prove this. You are the fourth of us that I have been watching, and the only one that I could contact before a disastrous end. Your error was in the direct connection of your body, containing the energy of its millions of molecules, indirectly to the reservoir through the actual operating mechanism itself! In my experiment, I realized this peril, and evaded it by a grounding-out lead.

If you recuperate we can again contact each other, after you safeguard yourself by this type of change in the inner circuit. Trace your wire from the amplifier circuit—"

As Q1 finished reading these words, the screen darkened; the images again became diffused and shapeless, and finally the viewer grew blank. Weakly, Q1 moved to his desk. There, he jotted down notes concerning his experience, then staggered to the mechanism that had been draining him of life-giving energy, and slowly reached for the switch. His awkward grasp displaced the harness cable, and with his hand on the poles of the switch, he grasped at the cable unwittingly.

A glow lighted the blank screen—displaying the horror-stricken face of Q2! And then, with a hissing, flaming arc outlining Dr. Quest's stiffly posed body, the entire hemisphere burst into a corona-like discharge! There was a roar of sound, a flash of light as if a lightning bolt had crashed into the room, and then—complete blackness!

The disappearance of Dr. Quest at his usual haunts preceded an investigation which resulted in the discovery of his body. Only the comment of the coroner at the conclusion of the inquest remains to be noted:

"On the assumption that Dr. Quest had been dead for three or four days prior to our discovery of his body, it is indeed amazing that there were none of the normal physiological processes associated with such a long period following death. No decomposition was evident; no growth of hair upon the body, no sign existed that any tiny portion of this body lived on. This man, uniquely, was the first case of which I have ever heard wherein every single cell seemed to have died simultaneously. If the notes left by Dr. Quest are to be credited at all, his body, con-

taining millions of cells of his own structure, and millions of bacterial bodies, lost every iota of energy that

would have supported life of any kind!"

THE END

# Vignettes

## OF FAMOUS SCIENTISTS

By ALEXANDER BLADE

**F**RIEDRICH WOHLER was born at Eschersheim, near Frankfort-on-the-Main, Germany, on July 31, 1800. In 1814 he began to attend the gymnasium at Frankfort, where he carried out experiments with his friend, Dr. J. J. C. Buch. In 1820 he entered Marburg university, and the next year Heidelberg, where he worked in Gmelin's laboratory. Intending to practise as a physician, he took his degree in medicine and surgery, but was persuaded by Gmelin to devote himself to chemistry. After graduation he became assistant to the chemist, Berzelius, in Stockholm, Sweden, and there began a life-long friendship between the two men. In 1825 he moved to Berlin, and became an instructor in chemistry at the newly established industrial school of that city. In 1836 he took the chair of chemistry at the University of Göttingen, holding also the office of inspector-general of pharmacies in the kingdom of Hanover. This professorship he held until his death on September 23, 1882.

During the first quarter of the 19th century, the science of inorganic chemistry became well established. Most of the commoner elements had been recognized as such, the atomic theory of Dalton had been demonstrated beyond all question, Lavoisier had introduced the balance as the fundamental tool of the laboratory, Berthollet had made clear the principle of chemical equilibrium, and Gay-Lussac the law of combining volumes.

But in the domain of organic chemistry, which has to do with those forms of matter found in living things—plants and animals—the old alchemical theory of a "vital force" as the cause of the myriad transformations constantly in progress in the world of life, still held sway.

When, therefore, Wohler announced in 1828 that he had effected the synthesis of urea, a compound that derives its name because it was first found in human urine (of which it forms the most important and characteristic ingredient), the intellectual world of the day was notably startled, and the conservative part of it, as usual, rather shocked. When the discovery came to the notice of Liebig, who was perhaps the most widely known chemist of the time, and also a man wholly free

from prejudice, he took it up with enthusiasm, and, working with Wohler, laid broad and deep the foundations of the science of organic chemistry which, since then, has become the most comprehensive of all the sciences, without which the industrial life of the present time could not have arisen.

**T**O WOHLER also belongs the credit of discovering the first case of isomerism, that is, the existence of organic substances or compounds which have identical composition, and yet entirely distinct properties. Since his day many hundreds of such have become well known.

In 1832, in collaboration with Liebig, they took up the study of a series of compounds allied to benzoic acid, an organic substance occurring naturally in certain gums, and found that they could be changed into one another, and that throughout these transformations a group of atoms consisting of carbon, oxygen and hydrogen remain unchanged. They called the latter the benzoyl radical. This was quickly followed by the discovery by them of the ethyl radical, which is common to alcohol and ether; of the cacodyle radical by Bunsen, which is possessed in common by several compounds of arsenic; and a number of others, all of which, though themselves compounds, behaved like single atoms of an element. Berzelius took up this important discovery in his enthusiastic way, and at once began to classify these radicals into the two groups of electropositive and electronegative, as he had already classified the elements; and endeavored to isolate them, under the belief that they were really undiscovered elements.

In this he was unsuccessful, and when his electrochemical theory was abandoned it was for a time believed, in the chemical world of the day, that the theory of organic radicals or pseudo-elements would also soon have to be given up. For a while Dumas' theory of type radicals seemed to be capable of at least deferring the demise of the whole theory. Finally, the conception of valency was introduced into that investigation, showing the different ways in which the atoms could be linked together into these radicals. This, in the end, has

explained why and how the molecules of different substances can be composed of the same number and kind of atoms, and yet possess entirely distinct properties.

Together with Sainte-Claire Deville, Wohler ob-

tained "Adamantine boron," and with H. Buff he investigated compounds of silicon and prepared a hydride of that element. He also obtained pure titanium and showed the similarity between this element and silicon and carbon.



**J**OHAN TYNDALL, British natural philosopher, was born in Co. Carlow, Ireland, on August 2, 1820. He received his primary education there, and at the age of twenty-four became a subordinate employee of the Ordinance Survey, and later of a firm of railroad engineers. He was to a large extent a self-made man; he was stimulated to earnest study by the writings of Carlyle.

In 1847 he went to England and taught mathematics and surveying at Queenwood College at Stockbridge. After a year there he went to Marburg, Germany, and devoted a couple of years to study, returning to Queenwood in 1851.

Tyndall's contributions to science are due more to his personality and his gift for making difficult things clear rather than to his original researches. He became known through some early magnetic investigations and was elected a member in the Royal Society in 1852. In May, 1854, he was chosen professor of natural philosophy at the Royal Institution, a post which exactly suited his striking gifts and made him a colleague of Faraday, whom in 1866 he succeeded as scientific adviser to the Trinity House, which had charge of the Lighthouse Service, and Board of Trade, and in 1867 as superintendent of the Royal Institution. His reverent attachment to Faraday is beautifully manifested in his memorial volume called *Faraday as a Discoverer*.

With his friend Huxley he went to Switzerland to study the motion of glaciers; his views brought him into conflict with Forbes and James Thomson. In 1861 he climbed the Weisshorn, and the Matterhorn in 1868; traveled in Algeria in 1870, and lectured in the United States in 1872.

Tyndall's investigations of the transparency and opacity of gases and vapours for radiant heat, which occupied him during many years, are frequently considered his chief scientific work. But his activities were essentially many-sided. He definitely established the absorptive power of clear aqueous vapour—a point of great meteorological significance. He made brilliant experiments elucidating the blue of the sky, and discovered the precipitation of organic vapours by means of light. He demonstrated that in pure air, free from dust or germs, a beam of light is invisible, unless coming directly to the eye. This led to a recognition of the enormous amount of organic and inorganic impurities normally existing in the atmosphere, to a study of their character and effects, and to improvements in methods of sterilization,

for the preservation of foods, the care of wounds, and the prevention of diseases of an infectious character. He called attention to curious phenomena occurring in the track of a luminous beam. He examined the opacity of the air for sound in connection with lighthouse and siren work, and he finally verified what had been already substantially demonstrated—that germ-free air did not initiate putrefaction.

**I**N ADDITION to his great ability as an investigator and experimenter in the fields of science, he possessed unusual capacity and charm of manner as a lecturer, having the power of interesting his audiences in science to a remarkable degree. This faculty brought him large financial returns, wherever and whenever he was willing and able to accept engagements among English speaking people. No man of his time contributed as much to the spread of knowledge of nature among the masses. His devotion to science for its own sake may be seen in his treatment of the money which came to him in connection with his successful lecturing tour in America (1872-1873). He placed the money amounting to several thousand pounds in the hands of trustees for the benefit of American science—an act of lavishness which bespeaks a noble nature.

He took some part in the controversy over theological problems which was going on at the time. He died at Hindhead on December 4, 1893. Tyndall, like Huxley, was popularly classified while living as a materialist. This mental attitude at the time was defined by the orthodox as "the denial of the existence in man of an immaterial substance which alone is conscious, distinct, and separate from the body," and those who held it were assumed to be atheists. These two notable and reverent students of nature were, like their contemporaries, Darwin and Spencer, men of deep religious convictions, as anyone must be who makes a sincere study of any aspect of the Cosmos, and they properly resented the imputation of atheism. To counteract the unwarranted inference drawn by their critics, Huxley invented the word agnostic to express the attitude that he—together with most of the scientists of the time—took. Their school of thought, which has spread enormously since, holds that human knowledge is limited by experience, and since the Absolute and Unconditioned cannot fall within experience, we have no warrant in asserting anything whatever with regard to it.





# The Triumph of the Pig

by Berkeley Livingston

**T**ERROR stalked the night. Every shadow, grey as rain blended into other shadows each as indifferent as the one before, about the two who moved so slowly and carefully in the rubble of what

had once been Horab-Ha.

But to Herndon Shaw and Camie Samie each shifting shadow was a new terror, to be investigated and carefully scrutinized and studied with care. For some of these shadows might be men.





**Terror stalked the shadowed ruins of once-mighty  
Horab-Ha. Why did two people dare its frightfulness?**

And if they were men then the lives of the two were at stake, more, the lives of millions might be penalty. . . .

The girl pulled at Hern Shaw's sleeve and he bent sideways with cocked head for the whisper:

"I'm scared, Hern," she said, her voice trembling somewhat.

He disengaged her hand and put his arm about her shoulder. But while his lips framed phrases of reassurance his eyes never ceased their search of the

ruins.

"... Easy baby," he said surely. "We got this far, we'll get all the way. . . ."

"It's—it's so quiet," she said. "Surely. . . ."

"It's quiet because there's nothing alive," he answered the fear in her. "Death puts a shroud of silence on everything when old ninety-two hits, Camie. You should know that."

The girl pressed her lips together stiffened, and gathered her courage. Hern was right of course. But this stillness. She had never known anything like it. Not even when Chicago had been wiped out. But that, she thought, could not be a good example. She had been only a few hundred miles from the scene and had flown to the stricken city instantly. There she had seen, heard, felt, smelled and been part of the horror. People, things had still been alive. She had even rescued some. But this was different. It was as though Horab-Ha had been dead for a very long time. . . .

Suddenly a whisper of sound came to their ears. Voices. . . .

To their left and right the skeletal frames of what had once been building stood, like the stubble of wheat after the harvesting. Ahead, the wide road on which they'd come curved away to mystery. And behind them the whispering sounds came closer. Hern-don Shaw acted on the instant. Gathering the girl under one arm he leaped for the shape of a wreck to his left.

Their rubber-shod feet gave no sound and the four moons of Planet X2 made plain the whole scene.

They were just in time.

The voices had died. But now a more fearsome thing was to be heard. The stamping sounds of a squad of men on the prowl. The man and girl burrowed deeper in the grey rubble,

yet trying to make no sound to betray their presence.

The sound of marching men came closer. And now they heard the distinct chant of their voices:

"... Hep. Step. One and two. Hep. Step. . . ."

Now the squad was abreast of the hidden man and woman. Another second and they would be past. The narrowed eyes of the man saw a group of ten men each armed with a dis-gun. They were all of a size, perhaps eight feet tall, and at their head marched one who was a good ten feet in height. He bore no arms other than a sword whose long length lay almost completely hidden in a scabbard. It was his voice that gave the chant, "Hep. Step. . . ."

They were abreast . . . almost past . . . and Camie Samie screamed in horror. . . .

Shaw swallowed an imprecation of anger as he shot to his feet and dragged the girl erect. He saw instantly what had made her scream. A hog had been rooting not two feet from where she had lain. Shaw's mind was acting with the speed of lightning. The road ahead was blocked by the squad who was already leaping to investigate the scream. There was but a single avenue of escape open. The ruins in which they had fallen among. Drawing his own sword he pulled Camie after him and raced ahead blindly.

"Damn!" he muttered under his breath as search-rays played about them. Fortunately not one of the pencil-thin beams struck them. But Shaw did not know how long fortune would play into their hands. He raced blindly ahead hoping against hope that luck would continue to favor them.

He thanked his stars that the Council had chosen Camie Samie to be his companion. She was, if not the best

cooperative in the secret service, than one of the best. And when the mission they were on had been broached he knew it was more or less a lost cause. Yet he had found a small measure of comfort in the thought that they had at least given him his just dues by providing a proper companion to this, his greatest adventure.

HE LEAPED ahead, his hand no longer in hers. She was not as strong as he but in all other things equal. He didn't have to worry about her getting far behind. Lithe as a deer, she could follow as easily as an Indian the trail of an hour. And as he leaped over the obstacles of fallen stones and crumbling masonry he knew that the handicaps he was finding, the pursuers were also finding.

But he had not figured on the cleverness of the squad leader. Suddenly the search-rays began to assume a pattern which in the end would concentrate them in a path down which the two ahead would have to run, as though it were a gamut of light.

Suddenly Shaw skidded to a halt. There had appeared an open space directly ahead of them. But blocking the path was a large herd of swine, immense animals, standing a full five feet at the shoulder. They had been rooting at the muck but at the approach of the two humans had left their feeding and as one, had lifted their snouts and ugly heads in the direction of the two.

"Got to break through them," Shaw said softly.

He heard the swish of the girl's sword being withdrawn from its scabbard. Then, still at a run, though much slower than the breakneck pace at which they'd come, the man and woman started toward the animals. But they did not go far this time. For

oddly the animals not only seemed unafraid they seemed to welcome the intrusion of the strangers.

They spread out in a thin line which blocked the other's path in a thin straight line, and having assumed that formation, started forward in a slow advance toward the oncoming couple. They came forward their hooves making clopping sounds, and snuffing sounds of pleasure from their mouths. There was something horrible about those sounds.

Their run slowed to a walk and then, as the beasts advanced to a halt.

"Hern . . . Hern! I don't like this," the girl said.

Shaw ventured a quick glance over his shoulder. The beams of the rays had disappeared some seconds before. He saw now that the squad was no longer behind them. He turned back at a wordless exclamation.

The animals had suddenly quickened their pace. And the line had curved, the end swine trotting forward in an ever-swifter run. These beasts wouldn't retreat, Shaw realized.

"Let's go baby," Shaw said and the girl puckered eyebrows at the grin in his voice.

She whirled in step with him and began to run back in the same direction from which they'd come. Ten yards, twenty, thirty around the broken remains of a column, down the shallow steps which had once led to a hidden patio and across the courtyard straight into a dozen beams of lights which enfolded them as a mother's arms enfold her children.

"Dis-rays!" Shaw had time to shout a warning.

BUT it was too late. He and the girl had no time for anything else. The discharge-rays had already sent their invisible threads of webbing curv-

ing around them. The man and woman couldn't see the invisible threads but already, even as they turned to their right felt them curl around their helpless bodies. In a matter of seconds they were as neatly trussed as the fly in the web. And about as helpless.

The combined light of the moons made plain the trap they had fallen into. The courtyard had not only two exits it had four, two of which were half hidden by heaps of dirt and rubbish. The ambush had hidden themselves behind these concealing piles and at the proper moment made their appearance.

"Take their weapons," bawled the leader.

"... The swine. . . ?" one of the men asked in hesitation.

"They will not attack as many as we," their leader said calmly. "And should they why we'd simply destroy them."

With what Shaw thought as he and Camie were placed across the brawny shoulders of two of them. He saw no weapons other than the sword the leader of the group carried, and the dis-rays the others showed. But he had to admire the guts of the man as he started back on the same route Shaw and the girl had just quitted. There was not a single step of hesitation or a quiver of a single muscle.

Then the first of the swin appeared and came face to face with them. With as little concern as though it were an everyday affair the leader stepped forward and ran through the first of the animals. It was an excellent stroke. The pig fell as though it had been pole-axed. But the second immediately leaped forward like a bull on the rampage. The giant took a single step to the side and as the swine charged past the sword found a resting place deep in its throat for an instant. And it too

fell to the ground.

In the interval between the first death blow and the second the other swine had come forward. As though they were motivated by a single force, they turned and ran from the courtyard. The giant turned to his fellows and said:

"They will not return. To the cars. . . ."

THE mono-car sped along at jet-speed. Shaw and the girl were in dark as to their destination although they realized after a while that it was a long way from the bombed out city and that the place they were bound for was underground. Silence had greeted their questions, and the only answers they got were shoves and stares of hatred.

The long, twisting path of tunnel was well-lighted and not too far below the surface of the earth. Suddenly there was a sharp breathtaking descent when it seemed impossible for the car to hold to its single rail, and after a short while of this a long stretch of level ground which ended before an immense gate. They must have broken invisible beams which opened the gates. And shortly afterward they drew up before their goal the building which housed Pillar the third.

The two prisoners glimpsed a long stretch of street with many shops and homes; people strolled along its straight length, men and women dressed alike in the toga-like garments which were the common dress. Far, far above the street level the roof of this vast underground city held myriad lights which made forever light the area below. Those were the things Shaw and the girl saw before they were hustled into the presence of Pillar the third.

Pillar the third was the last of a long line of rulers. In the beginning there had been wise and strong men at the head of his nation. But with the passing of time the ruling class had become weak and degenerate. Pillar was the weakest. Yet nothing of this weakness showed either in the face or figure of the man.

He stood a good nine feet in height with huge shoulders and arms and legs. His face was well-proportioned without visible signs of weakness. Further, his gestures and motions were incisive, his commands instant, and his decisions given in a tone which brooked no denials. His weaknesses were all hidden. . . .

The orderly which had broken in on the conference of the chiefs in the hall of the maps, told him of the capture of Shaw and Camie. Pillar's face clouded over in anger as he curtly excused himself and strode to the large room which he used for receptions and as an ante-room to his office.

Pillar flung the door wide, paused dramatically on the threshold, knowing full well the effect of his appearance, then strode into the room. Camie and Shaw had been loosed of their bonds and stood side by side before the great circular chair which was Pillars' minor throne. A retinue of servants and personal guards had preceded the entrance of their chief. These men ranged themselves about the room, the servants standing with folded arms and the guards with fingers close to sword hilt.

"Mighty Pillar," the leader of the squad began on a signal from Pillar, "these vermin, spies from their manner, were caught skulking in the ruined courtyard of Kuhbas Hon. From their dress we saw they were Earthlings. I thought it best to take them alive and bring them before your Great-

ness. . . ."

"Well done, Gaynur," Pillar said in measured bass tones.

The squad leader flushed in pleasure at the simple words. It was an accolade, he knew, and a promotion. Pillar rewarded well these things.

IN THE meantime the ruler of the hidden city of Hobat-Han bent his glance in appraisal of these two who had ventured within the broken nest of the upper city. He saw a well-proportioned man with strong resolute features, of average Earth height. The woman was tall for her race, of beautiful figure and lovely face. More, there was deep intelligence in those hazel eyes. Pillar nodded his head as though satisfied with what he saw.

"Why have you come here?" Pillar asked. "Of what use was the hazardous trip across the vast limits of space. . . ? Death can be the only reward. Surely you did not think to succeed? Many have tried. Why can not you come in peace?"

Shaw laughed, a sharp explosion of sound which welled from more than humor. It was a sound of bitterness.

"I don't think we need speak of history," Shaw said. "Peace. The most beautiful word in any language. And the most forgotten. Is that how the minions of the first Pillar came to the Earth, with peace in their hearts and minds? Is that why there is not a city on the whole face of the Earth which can be recognized? Is ruin of a dozen planets the signs of peace? Bah!"

Pillars' face burned red at the cold words of indictment. What Shaw said was true. The first Pillar had sent across his vast forces thinking of the ease of victory. There was no reason for the voyage except the lame excuse which an overweening vanity could think of. Planet X2 was not dying.

There was life of all kinds, enough land to support a dozen such civilizations and cultures. It had been simply a matter of pride: someone had said that Pillar should rule the entire universe. . . .

"I don't need a lesson in history," Pillar bit out. "I know the last hundred year's past. I only want to know this. Why have you two come here?"

"To destroy you," Shaw said calmly. "For no other reason."

Pillar fell back against the upholstered circular arm of his throne. A deep smile of amusement lit his features. He could admire the candidness of this man. But never understand the reason for the adventure. It was so hopeless, so futile, even if these two had succeeded.

"Did you think all this would end, even if I did die at your hands? I don't think this was your reason at all. I *could* get at the bottom of this. It would not be hard. There are limits to what the human body can take in the way of torture. We have found those limits. Then what would all this avail?"

"The great chieftain," Camie Samie spoke for the first time, "has misunderstood. My companion said, destroy you. He did not mean you personally. The you was figurative. . . ."

Pillar laughed aloud. He was truly amused at the colossal nerve of these two.

Camie went on:

"We saw swine up there on the surface among the ruins. They were rooting in the rubble. The triumph of the pig. They have become the real rulers of the cities. The carrion eaters will multiply until not a human will dare show his face to the sunlight. It will be the only real triumph. All else will be shallow and unreal. . . ."

"A prophetess. A painter of pictures

of doom. Not pleasant. But nothing in all this is pleasant. Or real, for that matter. The triumph of the pig. A phrase prophecy. Then let the pig triumph! He will rule everywhere. . . ."

HE STOPPED and looked up. He had become lost in the words and his head had sunk low until his chin was resting against his chest. He looked up in time to see a courier step forward. The man was breathing heavily as though he'd run for a long distance.

"Mighty Pillar . . . Greatness. . . ." the courier began.

"Speak. What message is yours?"

"A mighty fleet of space ships has appeared. They have swept our craft from the sky as though with a mighty broom. . . ."

Pillar cursed at the words. For an instant the composure of the man was broken. But only for an instant. Then the large, rather handsome face regained its measure of tranquility.

"Send for my Captains. Have them come here on the instant! This threat must be broken. As for these two, I will judge them later. Return them to the surface. . . ."

Shaw looked quickly to the girl. What did this mean, his eyes asked? Her brow too, showed bewildered lines. Then the guards were hustling them out of the room and down the corridor toward the place where the moncars had been parked. And once more the long, though quick journey, toward the surface. The guards were as silent on the return trip as they had been going. But in their eyes were glints of deep amusement, as though they *knew* what Shaw and the girl were being forced into.

The car doors opened, strong hands shoved the man and woman out, and as the door closed on their backs the

sound of loud laughter came to their ears.

SUNLIGHT the color of amber flooded the landscape. Now the ruins held a picturesque look. Camie stepped close to Shaw's side. Her nostrils were dilated and her eyes were wide.

"Well, baby," Shaw said, "lucky we oriented ourselves pretty well. Now all we've got to do is find the point of operations and get to it."

"Hern," she said in a low voice. "What's wrong with this place? Why did they laugh as we stepped out of the car?"

"A distorted sense of humor," Hern said drily. "Let's not worry about it. The thing to do is. . ."

"*What was that?*" her voice held a tiny note of hysteria.

Shaw had been listening to the strange sound from the moment they'd stepped from the mono-car, and had been trying to identify it. Now it came to him where he'd heard it before. It was the clip-clop sound of many hooves. But thousands of them. . .

They had been let loose on a level stretch of ground. The nearest ruins were a hundred yards off. Shaw had Camie keep their swords. A bitter wondered why Pillar had let him and smile twisted the lips of the man. If he had interpreted those sounds correctly, the swords had as much meaning as if they'd been made of paper.

The instinct in all men was very strong in Shaw. It had saved him many times before. Now it told him to seek safety. He turned to the girl and so attuned were they to each other's thoughts, when he turned and started at a run for those ruins she followed on the instant without asking why.

The sound of the approaching hooves was like thunder. Shaw cast a

single look over his shoulder and what he saw lent wings to his already flying feet. He had seen the advance guard of this huge army of swine. It was a tide of ill-smelling flesh, snorting, bestial animals turned carnivorous by circumstances, seeking flesh, dead or alive.

The path the two were fleeing on bisected that of the vast herd of swine. It was a question of whether they would meet. The human feet were the faster. But not by much. And even after the man and woman arrived at the dubious shelter of the ruins, they were not certain that it offered the protection they hoped for.

But when they arrived among the ruins and turned they saw that whatever the goal of the swine it had nothing to do with them. A vast cloud of dust hung in the air after the passing of the animals. The stench of their bodies clogged the nostrils of the two. The sun was high above them and the heat of midday almost intolerable, when the last of the pigs had passed. Carefully, Shaw and Camie started out again, both their swords held ready for instant use.

Shaw knew their goal lay in a westward direction. The small space ship, a two-seater of immensely fast speed lay at the base of a small hill not far from the city. Shaw had wheeled it into a shelter of brush to keep its cigar shape from prying eyes. Silence answered their footsteps. Nothing stirred. It was truly a city of the dead.

THEY knew they were coming to the limits of the city by the space between the ruins. And suddenly they were in green pastures. Flowers bloomed in lush profusion, trees threw majestic heights to the azure sky, and the grass was a thick carpet to muffle the sounds of their feet. For the time

they moved on the lush green carpet it seemed as though they were in an enchanted world, one which had no connection with that which they'd just left. But uppermost in their minds was the memory, sounds and smells of that which they'd seen and heard.

At long last they reached the spot of concealment of the two-seater. Shaw parted the brush and wheeled the graceful ship out. In a moment they were away. The speed of light was no quicker than their ship. Nor did it take long and Shaw received his first screen showed the head and shoulders warning to slow down. Another followed on the instant and his vision of a Venusian. Shaw was always surprised at the gentleness of the warlike people's voices:

"Commander Shaw and Lieutenant Samie, right?"

Shaw and the girl acknowledged the greeting.

"Rapat Murd speaking. Come in and report. . . ."

Shaw flicked the landing lever, settled back in his chair adjusted his strap for it. The girl followed his actions. He grinned at her and said:

"Rather tame, wasn't it?"

"Except for one thing," she replied.

"What was that?"

"Those swine. They were the only things alive on the face of this doomed place. It seemed as if they'd taken over the whole of it."

Shaw laughed in amusement. "Perhaps they thrive on the atomic radiations. . . ?" he suggested.

"Perhaps they do, and in a way we might not like," she said.

The signal for landing flashed red and after a second the gentle jar of landing. They stepped out into the landing hold of a giant Venusian cruiser. Seamen were already folding the wings for storage and waiting with

outstretched hand was an officer in the Venusian air force.

"Captain Horat Lo at your service. Rapat Murd asked me to escort you to him. . . ."

SHAW and Camie Samie came to brittle attention at the amount of brass they saw in the Venusian's office. Every high-rank in the Universe was there. They were grouped about the figure of a man in a chair behind an immense desk. They both recognized the man as Rapat Murd. But the one who took their attention was the man in the uniform of an officer in the marine corps of their own planet. He was the very officer who had sent them on the mission they were on. Their faces mirrored their surprise. He smiled with a quirk of his lips and said:

"Circumstances forced a change in plan. We'll explain. . . ."

The man behind the chair took care of that:

"Yes. The invasion plans matured rather more quickly than we wanted them to. Our thought was to have you lay the groundwork for it by following the instructions we had outlined for you. . . ."

"We did, sir," Shaw answered.

". . . H'm! Then we're right on the nose as far as the invasion itself is concerned. Well, it won't be long before the test will come."

"I'm sure of it, sir," Shaw said. "Pillar the third as much as told us. A courier announced the arrival of our fleet. And, I gathered, the departure of Pillar's. Is it true, sir?"

"Yes. Although *departure* is not the word to use. Flight would be more like it. We managed to break through their screen and close the ears of all their listening devices. Of course our speed made the surprise completely



effective.

"It was over rather quickly and mercifully. But we still face the problem of overcoming their forces underground. . . ."

"I'm sure there won't be a problem, sir," Shaw said with deep conviction. "I had the gas concealed in the hilt of my sword. Our nostrils were stuffed with *Vagus Z*, the new anti-gas compound. By this time the entire underground city should be uninhabitable."

There was a short silence. Those who had not been let in on the secret of the mission Shaw and Camie Samie had undertaken at its inception had been informed of it later. They felt an instant of deep admiration for these two who had deliberately thrown their lives away, for surely they hadn't thought to escape. That they had was a matter of the goodness of fortune.

"Well," Rapat Murd said, "the command to disembark has been given. Our invasion troops should be in engagement at this very moment. Are we agreed that the landing of our people shall begin as we roll the enemy back. . . .?"

The eyes of the two who had been brought aboard widened. What was this talk of landing of peoples? There was a discreet knock at the door, a command to enter and a ship's messenger entered. He held a leather case under his arm which he delivered to Rapat Murd after a salute. They waited with bated breath for Rapat Murd to read what the two pages the case contained, read.

The Venusian's face broadened into a wide grin as he read aloud:

" . . . Sections, 35, 36, 37, 38, 41, 42, 43, and 44 have made their landings according to schedule. A total of nine hundred million people have landed. Eight more sections to land and operations will have been per-

formed completely. All but a small section of Planet X2 is in our hands. This situation should be remedied in short order."

Satisfaction lifted Rapat Murd's voice on a higher note:

"Fine news, gentlemen. I gave a general order that should the situation warrant, a general landing order could be given. Let us go to the ship's visio-screen."

TWO operators were needed on the giant screen. Shaw and Samie found seats next to each other as the others seated themselves. Rapat Murd whispered instructions to an aide, who relayed them to the officer in charge of the screens operation. In a few seconds that section of the planet which had not as yet been taken slipped into view.

To Shaw's and the girl's surprise it was the very city which they'd just quitted. The scene shifted until it centered on the immense opening of the tunnel which led to the underground city. A gasp of horror sped from mouth to mouth.

From every point of the compass a legion of beasts swarmed toward that opening. There was no mistaking the genre of those beasts. Swine, all of them. Each had a goal, the tunnel. But never had those seated seen such swine. Even though they seemed small on the screen, by comparing them to nearby objects a hint of their size showed they were as large as elephants. . . .

The marine officer, who sat alongside Shaw whispered in horror-stricken tones:

"Here also. . . ."

Shaw and the girl turned to him. He didn't look at them as he went on:

" . . . So there is no escape."

"What do you mean, sir?" Camie

Samie asked.

"They are the reason Rapat Murd is here. They are the reason a billion people fled Venus. And they have already started to work their devil's play on the Earth."

Wordlessly, the three turned their attention to the screen. The action taking place was compelling. Huge mono-cars, capable of carrying a thousand people at a time were streaming from the tunnel to be swallowed by the monster army. They could see the warriors battling against them with futile swipes of their swords. They could see some using dis-guns. But the invisible streamers which could bind a human with inexorable bonds seemed gossamer in their effects on the swine.

Samie turned to Shaw and said:

"I said that the pig will triumph. I did not think it would be so literal."

The officer heard her words. His face was grey and lined, and he looked ten years older suddenly as he said:

"The triumph of the pig . . . how it came about no one knew. But suddenly it was there. They noticed it first on Venus. The pig became the king of beasts. Then the destroyer of beasts. And at the end the destroyer of man. Weapons had no effect on them. They were immune to the strongest, the deadliest. Perhaps the radiations of the atom-bomb bursts did it. We don't know. But suddenly, after a while, the

swine began a process of growth which accelerated rapidly. They became large as elephants, as houses. They moved like a plague across the face of Venus. A billion people lost their lives before plans could be made for this great migration. And now. . ."

"And the Earth. . . ?" Shaw was almost afraid to ask.

"There too. But there it is just beginning."

"How-how long does it take before. . . ?" Shaw couldn't go on.

"About two weeks," the officer answered shortly.

Suddenly Camie Samie spoke:

"How fitting the end is. *The triumph of the pig!* I spoke with prophecy. We were pigs too. War after war. The times of peace were fleeting moments. Had not the first Pillar attacked we would have. Space travel was commonplace. The Earth and its sister planets lived in a sphere of dread, each traveling its circle of suspicion.

"Now the circle is complete. The pig is master at last. Well, we were pigs for a while, human pigs. So there is no change except in like. I can almost see the end. We will flee this place. The peoples of all these planets and universes will flee. But wherever the pig will be he will triumph in the end. For he, alone of all the animal kingdom, makes no choice of food. A conqueror is as good as a cabbage. . ."

## GO AWAY, GRAVITY!

THE oldest question of all in physical science is "what is gravity?" No one has ever answered this puzzler to everybody's satisfaction. Even the great Sir Isaac Newton didn't attempt to give an answer; all he did was to formulate the mathematical law that describes the way bodies behave under its influence. This is not to say that theories haven't been presented—they have and with a vengeance, but they still don't give the proper satisfaction. Einstein's elaborate and involved theories, so abstruse and be-

yond the comprehension of the average man, leave us with that puzzler, "well . . . I'm not sure . . ." attitude.

Is there any place that can be imagined where gravity and its effects do not exist? Is it possible for human beings to conduct experiments entirely away from the influence of gravity? These questions have often been asked, and while the answer to both of them is a hesitant *no*, by the use of the power of the human mind, it is possible to imagine what would happen under such a lack of gravity.

There is a place on Earth, in spite of what has been said, where gravity would be non-existent—in a falling elevator. Suppose we went to the top of the Empire State Building, got in an elevator and permitted it to fall groundwards freely and unhampered. How would we know we weren't being influenced by gravity? It would be very simple. To begin with, we would have the sense of being completely free-floating as if nothing was impeding us. We could rise off the floor and remain in the air by application of a light little push. We could take coins from our pockets, release them, and they would remain suspended in the air. There would be absolutely no sense of "up" or "down" as we use those words. We would effectively be no longer in a gravitational field. As far as we would be concerned, gravity would no longer exist. Of course, eventually we would be brought out of this state rather abruptly.

Naturally this is only hypothetical—yet it could occur and it could be performed if there was some way of decelerating the elevator at the end of its fall. Some day, perhaps this will be done.

One of the favorite scientific problems proposed in physics textbooks, that has an overtone of science-fiction, involves a tunnel through the earth, through a diameter. Imagine a tunnel bored right through the earth, smooth-walled and reaching to the other side after passing through the geometric center of our planet. What would happen to a body—a closed cabin or the like—dropped into this hole? If you carefully consider the arrangement of the mass of earth around the

falling vehicle, you can predict how it will speed up and slow down. Would the inhabitants of the craft notice this? Of course not. For they would in effect, be in another elevator of the freely-falling variety. To them, gravity would be non-existent. To us outside observers, there would appear some unusual pendulum-like effects. The vessel would fall rapidly toward the center of the earth. Gradually it would slow down as it neared the center. Once past the center it would speed up. About half-way to the surface on the other side it would begin to slow down until when it reached the surface its velocity would be zero. Then it would fall back and repeat the cycle. This would continue indefinitely, the vessel, see-sawing back and forth in the tunnel between the two surfaces. It would behave exactly like a huge linear pendulum.

After all is said about what the effects would be like in a non-gravitational world, we have still come no closer to an answer as to what gravity really is. Numerous mathematical physicists, ranging from Einstein down, have racked their brains. Abstruse theories pour forth, but the answer remains substantially the same; we don't know. There has been a great movement afoot to link magnetism, electrostatics and gravitation. The first two are intimately related, but the last . . . no soap.

Gravity then, is best defined in the words of the country lad who said: "Gravity is what if there ain't any, the apple won't fall!" That's good enough for most of us.



# The Supernal Note

by Rog Phillips

**W**ITHIN the center of the Circle whose center is everywhere and whose circumference is nowhere, beyond the Abyss and towering over the dwelling place of Chokmah, yet permeating His every Cell; illuminating the countenance of brooding Daath and yet veiling Her divine form in Primal Mist so that only the demure purity of her bottomless blue eyes appears in the realm of Being; towering above That which IS and yet IS NOT, is the region wherein Eolin plucks the strings of the harp, Kether.

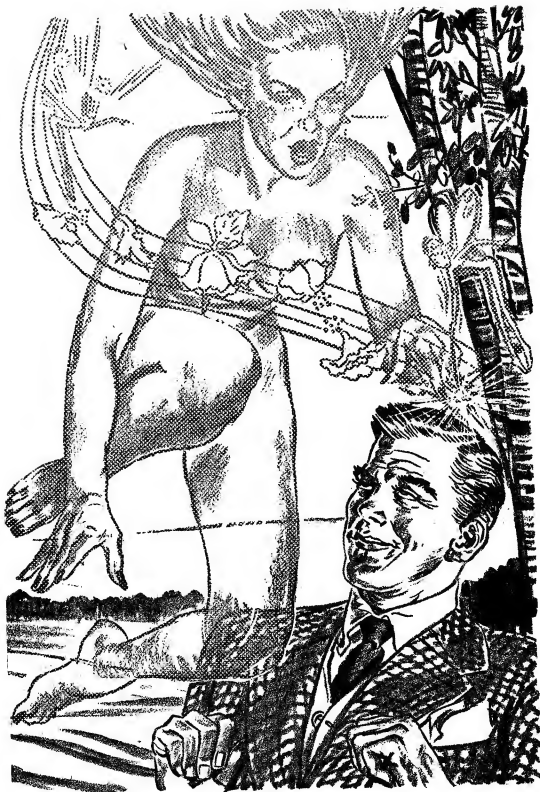
Now, Eolin is a musician, among

other things, and the melodies that flow from His fingers are simple beyond the understanding of Man, being now beautiful with the whisper of things not seen nor heard nor dreamt, now sad with the sadness that comes only to those who are great and noble, and who have suffered much, now care-free and gay as are the birds at nesting time, and kittens in sham battle to the death.

Strange and beyond the comprehension of Man is Eolin, the musician, yet even stranger is his harp, Kether, whose living strings are anchored at one end in the Unmanifest and at the

**The ways of the Fates are strange, and  
who knows what great meaning may lie  
behind a casual meeting of two absolute  
strangers?**





other end in the Manifest. And strange though the harp Kether is—so much stranger is Eolin Himself, who is strange beyond the ken of Man. Infinitely more strange is the music and the notes that come into Being from the strings, to blend and dance in a rhythm of sound and movement and other things which intoxicate the minds of Men and Angels as the ripples from the strings of Kether move and impart Life and Motion to the calm surface of the seas of Binah near which lies the dwelling place of Chokmah, eventually to spill across the Abyss into the regions where dwell men and angels.

And as the ripple and laughter of the music from the fingers of Eolin *reaches* across the Abyss to cascade like a merry waterfall, fleeing with virgin confusion from the loving embrace of Chesed recoiling with alarm from the strong embrace of Geburah, resting for a moment to drink of the beauty of Tiphareth whose labyrinthine grottos subtly remold the melody of Eolin so that Man can glimpse its strange beauty, it reaches the Veil whose golden web shimmers and quivers in delirious ecstasy at the caress of the notes as they pass. Then the music bursts forth triumphantly into Netzach where angels dance to its rhythm; swells into glorious splendor in Hod as it swirls in deep eddies; cascading down and down, seemingly to endless depths until it pounds against the foundations of Yesod, sending a spray of cool delight back even to the Abyss and beyond. But now the base and treble notes rise into the ascendancy and blend into a quiet, deep melody that flows like a river, winding its tortuous way between the grassy banks in the Meadows of Malkuth, where the timid deer pause to drink and taste its coolness, and where

the tired wanderer may rest and bathe his aching feet on his journey in search of the Holy Grail.

And then? The sweet, fluid song of life and love that once saw its beginning in the flowing rhythm of the fingers of Eolin, the musician, as they strummed the strings of the harp, Kether, seep into the thirsty sands of the Meadow which is called Malkuth, to sink below into the regions where dwell the Qliphoth, the fallen Sephiroth, which once dwelt with Angels in the time before Time began, when all that is and ever was was not, and Eolin slept and dreamed of life and love and beauty while his idle fingers caressed, even in sleep, the silent strings of the harp.

Disdainful of the evil Qliphoth, full of love for the angels of Tiphareth, ever patient with the children of Yesod, Daath looks down across the Abyss and through the Veil, and her heart lurks in the depths of her eyes as she caresses the children of Man with her gaze, for they are her first Love.

There are those among men who look up and glimpse the blueness of the eyes of Daath and sense the beauty of her form behind the Primal Mist, the dimly perceived contour of breast, the beckoning smile, the grace of form, and beauty of motion. And once he has glimpsed any part of this Supernal Form of Daath, he knows no rest or respite from his journey upward past the Veil, where, when the sands of time run low, and Eolin grows weary, he may stand on the edge of the Abyss and gaze across its impassable expanse, drinking in the beauty of Daath unveiled, the Primal Mists grown tenuous so that She stands naked and unashamed before her lover and beckons him on, her brooding eyes mocking him for his hesitation, her

lips coaxing with their redness and tender promise, her curving breasts soft and inviting, her body calling and reaching with yearning to embrace him and blend with his forever in the ecstasy of divine procreation.

Now, once long ago, or perhaps far into the future (since the melody from the strings of Kether is simple beyond the understanding of Man, and oft repeats itself) a single low note of infinite beauty throbbed forth across the circle whose Center is everywhere and whose circumference is nowhere, and its subtle harmony touched even Eolin himself who paused for a moment to watch its passage across the Abyss.

In the blue depths of the eyes of Daath a flame of anticipation came into Being, and flashed a message to Chesed who caught the Note of ineffable beauty in loving embrace as it sought to flee. Down, Chesed dropped, straight to the grassy plains of the Meadow which is called Malkuth, holding in firm embrace the Note with its Supernal Purity untouched by the fierceness of Geburah, unaltered by the labyrinthine grottos of Tiphareth, unbattered by the fall from dizzying heights to Yesod, and untainted by the Qliphoth as they lurk in the sands that lie beneath the Meadow.

There, standing on the grassy Meadow, Chesed paused, the Note of Supernal Beauty held in firm embrace, until, across the horizon a traveler appeared. Then quickly she sped over the plain, her form invisible, her presence unsuspected, to plant the Supernal Note above his head where it rested in all its untarnished purity, throbbing and pulsating in Ethereal splendor.

Then Chesed rose and sped into the sky, her passage so swift that the lacy film of the streaming folds of her attire molded itself to her figure, so that

even angels swooned in joyous ecstasy at her beauty revealed. Then, back in her place, she looked down upon the traveler; and he, looking up, saw only a point of scintillating radiance, a star.

THE uniformed man tapped Steve's arm politely and said, "Pardon me, sir."

Steve straightened and gave a last regretful glance at Venus while the uniformed man swung open the gate, then handed him his gate pass and hurried across the concrete while behind him the loudspeakers blared forth the announcement that all passengers on flight 32 to Albuquerque could board the plane through gate one.

He climbed the steps to the plane and bent forward so that his six-foot and more frame could enter, then paused in surprise. His eyes widened, betraying his feelings.

The uniformed young lady who stood just inside might well have made any man pause in surprise. Her features were a symphony of beauty in form and color and expression. Right now they were betraying her recognition and pleasure at Steve's recognition, and also the effort of concentration to hide her pleased response and utter the stereotyped "hello" in just the right tones of friendly welcome that had been drilled so insistently into her at the TWA school for stewardesses. She succeeded in doing so and listened to the deep timbre of Steve's voice in her mind long after Steve himself had passed her to take the rear seat just two feet away.

Steve settled back in his seat and watched idly as other passengers entered his range of vision and climbed up the sloping aisle of the two-motored plane to fill the remaining seats. At his back the melodious voice of the stewardess heralded the arrival of each

passenger with a soft "hello" that seemed meant for him alone. Her voice held the richness and beauty of tone that is the peculiar property of a cultured southern voice. Steve brought to his mind's eye the graceful, humorous curving of her lips as she formed the word, and thrilled to the memory of her softly tinted eyes, the graceful curve of her chin, the flawless purity of her face and the dark luster of her hair.

It was almost as if he had seen and known them before. He **MUST** have. But where? He closed his eyes in an effort to recall.

Unseen by him, but heard, the passengers made their way up the aisle to the seats. The crying of a baby came and died down toward the front. It vied with the angry whimpering of a puppy in the forward compartment just behind the pilot's cabin. The two were so alike that when one stopped momentarily it was difficult to determine which kept on, the baby or the puppy.

A slamming noise signalled the sealing of the plane. Steve opened his eyes and half turned so that he could look at the stewardess. She turned from the door she had just closed, and, seeing that Steve was smiling at her, she returned his smile.

He noticed how red her lips seemed, set off by the whiteness of her skin which seemed even more white in contrast to the dark blackness of her hair. Her smile was personal just as her voice was.

Outside, a motor roared. Regretfully Steve turned his attention to fastening his seat strap in preparation for taking off.

As the plane began to move forward the stewardess made a hasty inspection to be sure all the passengers were properly strapped into their seats, then

dropped into the vacant place in the seat across the aisle from Steve. Jealousy tinged his thoughts as he looked at the man beside her, and regret that he had not chosen the double seat instead of the single. Then he laughed at himself. After all, she was only a stewardess on a plane on which he would ride for but a few brief hours. He was one passenger out of many dozens that she encountered daily, and a very mediocre one at that.

**T**HE plane paused, its motors idling. One motor speeded up until it vibrated and roared in deafening blasts.

Out of the corner of his eye Steve noticed that the stewardess was paying no attention to the man sitting next to her. Instead she was looking at him. He smiled at her and she returned his smile. He searched his mind for something to say.

"Nice night for flying, isn't it," he said, then silently cursed himself for triteness.

"Yes, it is," the stewardess replied, and the melody of her voice told him that just saying something was more wonderful than anything clever that could possibly be said.

With a burst of acceleration the plane began to move across the field, faster and faster, until the tail lifted so that the aisle didn't slope any more. With almost perceptible tentacles the plane reached for the sky, missed, tried again desperately, grasping the elusive tendrils of Space as they slipped past, then gained a hold, swinging free from the ground below.

Desperately the plane clutched at wisps of evening breeze, its mood shifting from fearful uncertainty to more and more security, until at last the lights of Oklahoma City were far below. Then the plane relaxed with a



sigh, purring in tabbyish contentment, and one after another of the passengers matched its mood, unfastening their safety belts.

The stewardess began at the front of the plane and checked the seat numbers after the names of the passengers. Steve watched her covertly, admiring her slim, well formed body, the play of expression on her face. At last she came to him. In some inexplicable way he knew that she had been looking forward to finding out which name on the list was his. He wanted to ask her what hers was, but didn't.

"Would you like to have a snack?" she asked after writing his seat number after his name.

"Yes, I would," Steve replied. "And some coffee, please." He looked into her eyes and they looked back, laughing with pleasure and blue delight.

The snacks, as snacks always are, were infinitesimal cross sections of what had once been sandwiches. The coffee was neither hot nor cold.

The stewardess finished distributing snacks to all the passengers, then asked Steve if he wished more coffee.

"Yes, I would," Steve replied.

She took his tray. Steve stood up and followed her, making no move to return to his seat after she gave him more coffee.

"How long before we get to Albuquerque?" he asked conversationally.

"Three hours," the stewardess replied. "Too bad we don't have some cards. We could play gin rummy to pass the time."

Wordlessly Steve reached into his pocket and drew out a deck of cards.

The puppy's voice up forward drifted through the curtain of the motors' droning monotone. The baby was silent. Plums of cigaret smoke rose lazily here and there along the rows of seated passengers.

Now and then the plane lurched slightly as it encountered an air pocket, and the throaty sound of the motors deepened for a moment as they dipped more deeply into the night.

Quickly the stewardess brought out two small cases and set them on the floor, covering them with a pillow. Then she let down a folding seat clamped to the side of the ship and brought out the hardbacked folder in which she kept her report sheet to use as a card table.

Steve sat down on the pillowed cases and the stewardess sat on the built-in seat, placing the improvised table surface on their knees. Then he shuffled the cards and dealt.

A half-dozen draws, and the stewardess ginned.

"Hey, that isn't fair," Steve complained. "I'm the passenger, you know. You're supposed to let me win." As she chuckled at this the thought came to Steve, "In a couple of hours this will be over and she'll be gone."

"What's your name?" he asked quietly.

"MY NAME'S MARY," she answered. "And your first name is —?"

"Steve," he answered. Then he held out his hand, his mouth twisting into a mask of conventional humor to hide the pleasure of this moment and its accompanying certainty of ending which would leave an emptiness in his life.

"Pleased to meet you," Mary said, slipping her hand comfortably into his.

"How long have you been a stewardess?" Steve asked as Mary reshuffled the cards.

"Only since February," Mary answered. "February twentieth."

"That's not very long," Steve commented. "But most stewardesses don't

last long. Sooner or later they meet a nice guy like me and get married."

"Not me," Mary answered, dealing out the cards carefully. "I'm going to make a career of being a stewardess."

"I'm a writer," Steve volunteered.

"Oh?" Mary said, arching her eyebrows. "Do you write stories?" She sorted her cards while waiting for his reply.

"Yes," Steve answered. "If you will tell me where to send it I'll send you one of them."

Mary reached up behind her and pulled down a black patent leather handbag, extracting a card from its depths. On it was only her name. She penciled in her address and handed it to Steve. He placed it in his wallet.

The baby up forward started to cry. A quiet note sounded from the call bell and Mary went to answer the summons.

The motors droned monotonously and the plane lurched more often than before as the air grew increasingly more rough.

UNSEEN and unfelt the Note in its untarnished purity settled a little lower, sending out faint quivers into the surrounding atmosphere.

A farmer far below, hurrying to the house from the barn to get more hot water for a sick calf, looked up and saw the plane passing overhead. He stared in wonder at the halo of bright radiance that bathed the ship in its passage beneath the stars and attributed it to the red, white, and green lights that winked slowly from their perches on the ship.

Eolin strummed softly on the strings of the harp, Kether, while Daath watched the ship's flight from beyond the Abyss, and Chesed blinked slowly in rapt attention, her cloak of mist glistening brightly as it hung in loose

folds, hiding her beauty from the eyes of men and angels, so that she appeared only as a point of scintillating radiance in the heavens, a star.

In the thirsty sands which lie below the Meadow which is called Malkuth, the Qliphoth, those Evil Sephiroth, reached hungrily upward, clutching at the radiant purity of the Note from the strings of the harp, Kether, longing to possess it for themselves. With each grasp they came closer, and as they missed and fell back into the slime to try again, the plane lurched feebly in its flight, but struggled on, helpless to do more than creep across the heavens, its terror-ridden propellers clutching each elusive breeze, its fragile wings fluttering imperceptibly with a helplessness as it tried to burst the barriers of man-made structure and flee from the danger that it sensed below.

All unknowing in its belly a baby cried and a puppy whimpered out its lonesomeness, while people slept, or thought of things mundane, of no importance in the scheme of things above.

MARY came back and resumed her place. The game went on. This time Steve won and crowed triumphantly while Mary pretended to be very irked at having lost her lead.

"Would you like a sandwich?" she asked suddenly.

"I am hungry at that," Steve admitted.

Mary pulled out a drawer and took out two sandwiches.

"These really belonged to the captain," she confessed, chuckling, after they had bitten into them. "But there's one left, so he won't starve."

As if in answer to her mention of him the captain appeared through the forward hatch and made his way down the aisle. When he saw the lone remaining sandwich he glanced with

lifted eyebrows at the back of the stewardess, but said nothing.

He stood and watched the progress of the game while he ate his sandwich.

"How's it coming?" he finally asked.

"Neck and neck," Steve said with a grin.

"He's way ahead of me," Mary corrected. "I'll have to have a lot of luck to beat him out."

The captain made his way back forward while Steve shuffled the cards and dealt.

"You know," he said as he laid the deck down and turned the top card over, "ever since I got on the plane I've been trying to place you. I don't mean you, but I used to know someone that looked almost exactly like you. I can't remember who it was, or even where it was. If there WAS someone, she would be about thirty years old now. You aren't that old so I know it wasn't you. But it was someone like you, and a house with brown-paneled walls and broad eaves."

"It couldn't have been me, Mary said. I'm only twenty-two."

"I know it wasn't you," Steve said. "It doesn't really matter, but it aroused my curiosity. It must have been in Spokane. It couldn't have been anywhere else."

"I've never been in Spokane," Mary said, drawing a card and studying it.

"It couldn't have been you even if you had," Steve replied. "Do you know you're very nice looking?"

Mary darted Steve a mischievous smile.

"Thank you," she said. She slipped the card she was holding into her hand and discarded another.

"Is that address on your card your home?" asked Steve.

"No," Mary answered. "Three of us girls live there. We have an apartment, and we are all TWA hostesses."

Steve rejected the idea of taking the card Mary had laid down, and drew off the deck.

"Oh," he said.

THE Note drifted forward, and its aura stole around the two as it settled more firmly. Mary and Steve did not look up. They were intent on their cards, yet were drinking of the nearness of each other, their spirits reaching over the gap between them and touching wonderingly and amazed, and marveling at the beauty and delight of the Note which bathed them with its freshness, as the morning sun peeking through the clouds sends warm rays to change the dew into priceless jewels nestling in the grass.

As the Note began to blend its Substance with the souls of Steve and Mary, it gathered in its streaming outer rays and wrapped them more securely into place.

Below, the Qliphoth raged and fumed in helpless impotence and sank beneath the slime to nurse their hurts. In the sky the plane droned on and on, and Venus winked her solitary eye.

"DARN!" Mary said as Steve laid his hand down and ginned. Hastily she added up the score. "That's the finish," she added, glancing at her watch. "Fifteen minutes before we get to Albuquerque."

Steve picked up the cards and put them in his pocket, helping Mary put the cases and the pillow away.

"Have you ever been in Albuquerque?" Mary asked.

"No I haven't," Steve replied.

"Well, we'll be there for ten minutes," Mary went on. "Run into the depot and look over the collection of things there. They were all made by the Indians. Some of them are very nice."

"I'll do that," Steve agreed. "Do you go on from here?"

"No," Mary said regretfully. "I'm on the next plane back to Oklahoma City."

"Damn!" Steve said. Mary looked at him in a way that told she agreed with his sentiments.

UP FORWARD the light behind the sign flashed on and made visible the lettering which said, "No smoking. Fasten your belts."

Steve dropped into his seat, and Mary slipped into the one across the aisle. The plane, once more confident of itself, settled slowly, testing the feel of Earth once before letting its wheels come with finality into contact. The motor snorted with animal spirit and bit into the midnight air as they pulled the plane into position near the depot and, with a final spurt, coughed and died.

Steve left the plane first and was in the depot before the other passengers. Sure enough, there was a large display of jewelry made by the local Indians. He examined it with interest until the loudspeaker warned all passengers to return to the plane.

Then he pushed through the swinging doors that led outside and walked toward the plane.

Mary was ahead, standing as if waiting for him. Something tugged painfully at his heart at the sight of her, and for the first time the realization dawned that she would not be with him when the plane took off again.

As he drew near her she held out her hand, a warm smile on her face.

"Well, Steve," she said quietly. "I hope you have a pleasant trip."

He took her hand in his. He didn't dare look into her eyes lest she see what he had suddenly discovered.

"I hope we see each other again some time," he said lamely, feeling the utter futility of anything he COULD say or do in the few brief seconds before he would have to get back on the plane.

He felt a desire to plant his lips on hers. He knew he wouldn't and he knew, too, that he would hate himself for the rest of the trip for not having done it.

When she echoed his, "I hope we do see each other again," he relinquished the comfort of her handclasp and turned to the plane.

Inside, Steve glanced up at the new stewardess who smiled warmly at him and said, "hello," in the tone of friendly welcome that had been drilled into her at the TWA school for air hostesses.

Steve paused in amazement at her plainness. He knew it was just the contrast, but it still surprised him that anyone could look so plain and uninteresting.

He didn't return her greeting, but brushed past her with an apologetic smile and dropped into his seat. He couldn't tell her that to answer would have been to desecrate something holy.

As he fastened his safety belt the entrance door slammed closed. One motor coughed and then settled into a steady roar, then the other. The plane moved across the field, took off, and wended its way into the night.

ABOVE, beyond the Veil, across the Abyss, Daath watched in brooding silence, a gleam of satisfaction lurking in the infinite depths of her deep blue eyes, which are all that is perceptible to Man in the Realm of Being. And Chesed peeked demurely through her veil and smiled serenely at the slowly creeping plane. For visible in the realms above, but invisible and

unsuspected on the Meadow which is called Malkuth, a faintly luminous strand of infinite purity spanned the gap between the plane and the depot.

The Note which had come into Being through the fingers of Eolin, the musician, pure and undefiled, in its journey from the strings of the harp, Kether, which are anchored on one end to that which is not and on the other end to that which is, had reached its preordained fruition. Anchored to the hearts of two people, it made them one.

Now Eolin's fingers flew more rapidly as he strokes the strings of the harp, and from the strings a new melody was born, to ripple the surface of the seas of Binah and cross the Abyss to the loving clutch of Chesed and flee in laughing delight, recoiling from the

fierceness of Geburah, resting in the labyrinthian grottos of peaceful Tiphareth, touching the lips of angels in light caress in Netzach, swirling in wild rhythm as it plunged over the brink of Hod to fall down and down until Yesod broke its mad plunge and turned it into the deep and peaceful channel that winds through the grassy Meadow that is called Malkuth.

Then the Note, now anchored to the heartstrings of two mortals, blended its tone into the music of Eolin, vibrating in echoing harmony with the song that came into Being in the regions beyond the Abyss where brooding Daath watches eternally, in the center of the circle whose Center is everywhere and whose circumference is nowhere.

## COLD ABOVE THE EARTH

**W**HY should the upper atmosphere be intensely cold, when it is nearer than is the earth to the sun, from which both earth and atmosphere get their heat?

Radiation from the sun passes very readily through the atmosphere, and absorption of heat is concentrated on the surface of the earth. What heat is absorbed by the atmosphere of the sun's rays on their way to the earth, is diffused, and not concentrated as it is on the earth's surface. The earth warms the air, by contact and by emission of long-wave radiation, much more easily absorbed than the shorter wave-length solar radiation. The atmosphere, in short, lets the heat from the sun pass through it to warm the earth, which in turn warms the atmosphere.

The lower atmosphere, that under about six miles high, emits radiant energy, more than it absorbs, causing cooling, and there is vertical convection, the temperature decreasing rapidly with increased height. The emissive power also decreases rapidly as the cold becomes greater.

At the elevation of six to seven miles above sea level; the temperature reaches a low of about 65° below zero, Fahrenheit. The loss of heat by radiation is here equal to the gain in heat by absorption. Higher than this the temperature decreases only slightly, if at all.

We have then, the strange phenomenon that, up to a certain point, the nearer one gets to the sun, source of the heat of the atmosphere, the colder the air becomes.



**John and Grace didn't mind adventure, in fact they sought it out—but the events on this particular asteroid were too much!**

# AMOEBA 'ROID

by CHARLES RECOUR



THE three-dimensional astro-chart projected into the darkness of the control room winked its multi-colored eyes intermittently as John fed the key to it. Flipping his fingers over the keyboard rapidly, John saw the orange light wink again.

"That's where it should be. Why isn't it?" he muttered half aloud.

Grace had watched him go through the charts a hundred times if she had watched once, but she had said nothing for the last half hour.

"Darling," she said at last, "calm

down. Let's be logical about it. We know it's here somewhere. The chart can't be wrong. Dad was here. He wasn't any great shakes as a navigator but he knew enough about astronomy not to mis-plot a B-2 chart!"

"I know you're right, but I can't help but think there's an error somewhere. We should have hit it before. The chart shows a four hundred thousand ton nickel asteroid at these co-ordinates. Why isn't it here?" John's face was small-boy crest-fallen.

Grace tossed her lovely brown head. Without gravity her hair assumed a hundred weird positions. In spite of himself, John laughed.

"All right," he went on, "we'll keep probing with a beam as well as visually, but I hope something shows up on the radar-scope. I know we'll never see it."

"Don't be so sure of that," Grace shot back, "four hundred thousand tons of metal is a pretty big chunk. And remember, Dad said it was pocked and ashed too. There are probably half a dozen different things there besides tantalum."

Both Grace and John settled back in the cushioned air-rubber acceleration seats and resumed peering through the large port of the rocket. John reached over to the control panel and flipped the switch on the radar's automatic sweep. Invisibly, pulses of high frequency radiation sped from the nose antenna which oscillated and reciprocated, sweeping a large volume of space before it. Anything it encountered appeared as a blob on the fluorescent line.

Grace tightened the seat belt to prevent her from floating about the control room of the "free" rocket and did things with a pair of binoculars.

As space rockets go, the *Tellus-243* was not big. Thirty meters long and

seven meters in diameter, the major portion of its bulk was fuel, food, and machinery. Practically automatic, indeed completely so at times, it could have been handled by a baby.

John and Grace Compton had been married a year before, shortly before Grace's father had died. John had been attending the technical school at Luna City where the greatest work was be done on sub-atomics. It was here that he met the grizzled space prospector and his daughter. It hadn't been long before he had married Grace who was more experienced in practical rocketry than he had ever dreamed of being. Knowing that he was going to pass beyond this veil soon, Grace's father had given the two of them the only legacy he possessed besides his battered rocket—the chart to an asteroid full of tantalum, a metal in high demand for surgery—a metal for which there was no substitute for flesh and bone do not knit to other metals.

In an effort to secure complete financial security for both of them John agreed to spend a year on the hunt for the asteroid which in the grinding Belt, was proving to be still unknown.

For better than six months they had plied the belt spending most of the time "out of grav", gradually becoming real prospectors, but almost breaking their hearts with the apparent futility of the thing.

The radar screens showed nothing. Visual observation showed nothing. Where the asteroid was supposed to be, was empty space. But this didn't necessarily mean too much. It is almost impossible to orient a position with respect to another object so small and in such a huge volume of space. Consequently, only tedious and patient search could locate the 'roid. Grace's father had pulled a spectrogram on some ore samples, but not until he had



returned to Earth. It was too late then to go back and collect.

John's musings on the events that led him from the Labs of Luna to the 'roid Belt were suddenly interrupted.

Grace flipped her belt loose and with a flick of her toe shot ceilingward. She stopped herself with her fingertip.

"John! John!" she squealed jubilantly, "Look at it! Oh darling, we've found it." Her arms found his neck and he was almost smothered.

WHEN he managed to free himself enough to see, he peered to where her arm pointed. He put the binoculars to his eyes, and squinted. Involuntarily he gave a gasp of pain as the reflected sunlight caught his eyes, from sunward. But there it was!

"Grace," he said, "you were right. I should have had as much faith as you. Look at *that* beauty."

Both of them stared for several minutes at the spectacle they wanted to see so much and for so long. The lump of rock and metal reflected the light brilliantly and showed the irregular outline of itself to them. John let go of the binoculars and they floated away. He turned to Grace, holding her close, feeling her warmth against him.

"Sweetheart," he breathed against her ear, "this is ours. Think what this'll mean on Luna. I can study now and we can have the place we want under the Dome."

His voice changed abruptly to a note of teasing. "Of course you're going to blister those hands and then some!"

Her voice was serious. "I don't mind, John. It's the end of a lot of worry and trouble for both of us. Should I dump fuel now?" She quickly became practical.

"No," he said, "not yet. Wait until we land. We can always get rid of the nitro compounds. I'd sooner have too

much fuel than too little."

"Right, captain — darling," Grace retorted, "I know who's boss."

"You sure do," John grinned back.

Both went back to their seats and locked their belts. A little acceleration couldn't be fought without an anchor.

John started to punch keys on the bank before him. Very gently the *Tellus-243* eased forward and the bulk of the asteroid started to loom up alarmingly. Ragged and irregular in outline, it offered a provocative and dangerous view. John cut the power.

"Take over, darling," he said, "this calls for a rocketeer, not an amateur. You've got the jets, not me."

"O.K." Grace played with the keyboard like a virtuoso toying with a piano. The fore and after jets alternately spouted under her skilled touch. In minutes the rocket was a few hundred meters from the 'roid. Gently, ever so carefully, Grace slipped power to its bulk until it was ready to ride on the underjets. Slowly she lowered the ponderousness of the rocket to grayish surface, the blackness of space around the atmosphereless object unchanged.

With a light bump, the rocket hit the ground as Grace cut the jets completely. Through the port of the motionless rocket, Grace and John studied the terrain of their long-sought objective. Having landed near one end of the planetoid, they could see that it was perhaps two kilometers long by one in diameter if such terms could be used to describe the weird cigar-shape that made up the little world. The touch of the rocket had stirred up little whiffs and puffs of the vaporous dust-like soil that formed the surface.

Gravity of course, was practically non-existent and everything including the ship was almost "free." An outside touch or blow could have hurled the *Tellus-243* back into space.

"Hop into the suits, hon," John said. "Let's make a preliminary, but first we'll anchor 'Telly'. I don't want home to run away."

In a matter of moments, the two were into their metal-fabric suits with self-contained food and air. An explosive pistol, a heat beam, a few tools—sledge, steel rod—made up their equipment.

They stepped in and out of the airlock. They were on the asteroid!

They sank to their ankles in the powdery dust, which spurted and eddied under their metal-shod feet.

John handed Grace a metal rod with a loop on the end.

"Hold this, Grace," he said, "I'll give it the muscle treatment."

"Watch my head when you swing that thing you big lug," Grace said.

HE BROUGHT down the sledge and without much trouble the rod sank into the powdery surface. John forced it into the ground for a meter.

"That ought to hold" he grunted as he bent down and strained to pull it loose. Then he attached a cable from the metal airlock to it. Now an accidental shove wouldn't send *Tellus-243* away from the 'roid. The space-suits were not powered and it is a nasty thing to try and reach an objective free without something to work from.

"Let's look around John." Grace said over the transceivers. "And let's stick together while we do it. This makes me creepy."

The two bulky figures floated and hovered over the airless surface of the 'roid. It was obvious from the start that they needed more magnets. They were too "free."

John went back to the rocket and brought out a couple of more powerful permanent magnets, which he fastened to the pockets in his and

Grace's leg-sections. Now they could walk with some semblance of normality.

"Oh, John, that's better," Grace said, "I don't feel as if I'm going to kick myself away from here—what'll we call this place?"

"You name it," he answered. Behind the glassite helmet Grace saw his face become sober. "Your Dad needs a monument. What's the matter with this?"

She thought a moment. "We'll call it Bergen's Rock. I think he'd like that, don't you?"

"Fine. Bergen's Rock it is. Now let's go. I think we both can move a lot better now. Here go the tantalum hunters!"

They set off in pace-covering strides, leaving behind them a vapor trail which rose briefly under the furious poundings of their boots and then gradually subsided, softly swirling back to undisturbedness. It had been a long time since Bergen boots had disturbed its untouched dust. Because walking was not too easy, and because distances were deceptive, John and Grace spent a long time in making a journey around the minor diameter. Everywhere they saw the same thing. Apparently the surface was uniform.

Finally though they completed it. No novelty presented itself to them. Everywhere was the dust. Before they entered the ship again, Grace suggested they bring in some of the dust and try a crude spectro on it.

Scooping up a handful, John brought it with them into the control room. It was the work of a moment to throw it into the spectrometer flick on the electric arc, and snap a photo.

Quickly, almost breathlessly Grace developed the film strip.

She looked at it for a moment. John looked at her. She looked down at the

text before her.

Her face broke into a smile. She nodded. There was sparkle to her eyes. John exhaled a deep sigh.

"This is it, all right," she said, "Pardner, we 'uns hev struck pay dirt!"

"It's tantalum, eh? Well, all we can do is load and load. That requires muscles. Hop back into that suit, dear. I'll supervise." John remarked slyly.

"Ha! You will!—listen, bossman," Grace came back, "*I'm* supervising *this* one. *You* get into a suit."

"We'll get some sack-time first." John said seriously. "We need it. Tomorrow"—he smiled wryly at his own use of the term—"we'll go to work, although I think it'd be a better idea if we took a look at the long end of 'Bergen Rock'. What say?"

"All right," Grace agreed, "we'll sleep now and look around this chunk of metal. But let's load up soon, dear. I still don't like this place for some ungodly reason. Now don't go scientific on me—I *don't* like it that's all."

In a short while the two had retired and silence again descended on the rock. There was complete quiet . . .

THE alarm jangled. Get up, get up, get up, it seemed to shrill.

John awakened from the deep sleep of exhaustion, his mind still full of the subtle equation he had been dreaming about. Grace awakened too, more alert, her mind toying with the equation which had occupied her mind—~~her~~ face in the form of John's.

With the usual pleasantries exchanged, John and Grace were up and around. After a six months search for a minute hunk of rock in the vast 'roid Belt, they had too much to gain to waste time in endless sleep. A lot of the fuel would have to be dumped. The tanks would have to filled with dust

which assayed all of ten per cent tantalum—and then to Luna City, where John and she could resume a normal life as befitted a technician and his bride.

In short order they had breakfast. Outside the port they could see that their little world was unchanged. Their footprints were still visible and would be for eons of time after they left. No breath of air disturbed this fragile world. No men assaulted it but they. The silence of the ages would endure. In a way, John mused, Bergen's Rock was a fitting tribute to Grace's Dad. It would long endure.

Carrying their same equipment, supplemented by a pick and shovel, Grace and John set out for the long trip, a distance of more than six kilometers. This was no simple matter. Walking and floating was weirdly enervating especially in the confinement of the suits. But their curiosity had to be assuaged. Fortunately weight was no handicap. There was only the inertia of mass to be overcome. It still takes energy to conquer inertia.

They had not gone a hundred meters from *Tellus-243* before Grace stopped John with a tug on the arm. He turned toward her.

"John," she said in a burst of exuberance, "isn't it wonderful! We have enough tantalum to fill us to the ears. And of course we'll stake a claim to 'Bergen Rock.' I think we can get almost any company to work it for us."

As nearly as he could, John put his arm around the bulk of Grace's clumsy suit. He looked at the rocket and then at her.

"Dear" he said, "I don't care about the tantalum or the rocket. I have you. That's enough for me—with sub-atomics."

"Stop making love to me on a planetoid, John. You can't kiss me, now. I'll

think about later." Grace said.

They smiled at each other. In spite of their banter the, feeling that existed between them, accompanied by the thought of the utterly secure future that their legacy gave them, made them involuntarily more than tender to each other.

"Come on, honey, we got things to do. It was your idea to look around Bergen's Rock. And we've still got a ship to lead up, remember?" John said briskly, his voice changed peculiarly by the inevitable rasp of the built-in headphones.

The two resumed their trudge through the dusty soil. It was a source of never-ending satisfaction, John thought, to see the continual flight of dust from Grace's footsteps. If they were violent and rapid, the dust rose and hovered for a long time before it settled. This left a long snake-like trail behind them. There was enough feeble gravity to cause this.

It took them better than two hours to negotiate the length of the planetoid, before they were ready to descend into the sunless side. Perpetually presenting one face to the sun, the asteroid had eternal night and eternal day—on opposite sides.

The sunless side appeared no different than the other. It too was a comparatively plane surface with occasional ribs and hummocks visible as far as the eye could see by the little light of the stars.

Trudging along, Grace and John consumed another hour, approaching the same end of the planetoid as the ship was on, but on the opposite. Their conversation was animated because both were in good spirits, but there was little to say about the planetoid itself. Apparently it was featureless, like the countless millions of others that constitute the Asteroid Belt. From what

broken planet these fragments came, man will never know, but as Bergen's Rock proved, they often have incalculable wealth.

FOR ten minutes they had been silent, each immersed in their own thoughts, of Luna City, the Dome, of school and normal society. Grace had been more adaptable to the six months of futile prospecting than John whose mind was continually on the mathematics of involved physical problems—except when he looked at Grace. Grace had a natural buoyancy and resiliency that made even the crude hardships of rocket work pleasant. And yet nothing was subtracted from her femininity.

Abruptly, Grace halted.

Even over his phones John thought she sounded afraid, when she said softly:

"Look, John. Over there by the hummock. Isn't that a cavern or something?" She pointed with her shovel.

It didn't require much looking to realize it was just that.

"Why whisper, Grace?" John asked. "There's nothing here to make it. It's natural. You sound almost afraid. What's the matter?"

"I am afraid. There wasn't a thing on the other side."

"Does that mean there's something here? I think you've got the jitters, honey. Relax. We'll take a look at it anyway."

"No, John. Let's not. Let's get on on the other side as fast as we can. Let's fill the ship and get away. Let a company explorer worry about it. Oh, John, you know I'm not a coward, but I've seen some funny things with Dad. I don't want any more experiences like the one I told you about. And anyhow, Venus has people on it. This place is dead."

John laughed. He gestured toward the opening in the hill-like bump. "Let's take a look, just for curiosity's sake."

His booming laugh seemed to reassure her. She couldn't leave him try it alone. She forced herself to smile.

"All right," she said, "I'm game, but let's stick together. I can't afford to lose you."

"Don't think you can get rid of me so easily," he joked. "I'm going to be around awhile."

On the bantering note the two of them approached the opening. It was a cave-like hole about six feet in diameter and they could enter it without stooping. They paused at the entrance. John looked down.

"Nothing has gone in or come out of this place for eons," he said. "You can see the dust is undisturbed."

"Without air, nothing can live." Grace said philosophically. "Forget about before. I can take it. Lead on MacDuff."

John threw the light-beam of his hand torch on the walls as they stepped into the entrance. There was nothing unusual. The cavern apparently led downward at a gentle slope, its walls and floors composed of the same impalpable dust. It still eddied and swirled under its lack of gravity as it did on the surface.

They proceeded at a very slow pace so as to disturb a minimum amount of it. But no matter how careful they were the dust gradually increased until it was difficult to see ahead of the beams. Added to the difficulty of seeing was the discomfort of the long walk they made in the space-suits. It was hot, dirty and uncomfortable.

But they went on cautiously. John led, with Grace following closely behind periodically touching him on the back so as to assure contact.

They had gone on for less than two hundred meters, always moving at a gentle shop barely detectible to them. The tunnel remained unchanged in shape or size. Grace suddenly ran into John as he stopped instantly.

"Stay back!" he whispered hoarsely, "My god!"

"What is it, John?" Grace shouted.

"I don't know," he answered, "Come up beside me and look, but hold on to me."

Grace looked. She swayed involuntarily.

**T**HROUGH the enfeebled light of John's electric torch she could see they were both standing on the rim of what appeared to be a large depression or pit against which the tunnel they had been following terminated. But it was not the pit that startled her. It was its contents.

At first glance, the pit appeared to be floored over completely with the same dust that made up the surface of the planetoid.

But that twenty by twenty meter depression was more than dust-floored. There was something underneath it! A fluid, viscous unknown that vibrated gently . . .

Grace and John stared at it amazed. The light illuminated its surface more clearly now that the dust kicked up by their passage was once again settling down. John held the light on it, watching it closely with the detached air of a scientist contemplating a new experiment. Something in the back of his mind told him—get out—get away.

Grace put it in words.

"John," she said, in a choked half-whisper, half-shout. "Let's get back to the ship. Please darling, let's go." She tugged at his arm. John's face was a mask of disappointment. It was all he could do to tear himself away.

He started to turn, utterly fascinated now by the little psuedopods that seemed to break through the dust so fluidly and then descent into the nameless substance again like waves on the surface of a rippled pond. How can it be alive—whatever it is, he wondered.

Grace had started back, and he followed in her footsteps. Without a hint of warning a tentacle of the amorphous substance caked with dust and as big around as a man's forearm shot from the center of the strangely living thing. It went by John like a streaking python.

Graciously it curled itself around Grace's waist apparently not impeding her.

She screamed and started to run. The tentacle made no effort to halt her. It flowed instead with her. John ran madly after her, the blinding dust cutting off all clear vision. The tentacle, a rigid rod alongside him made no effort to touch him and in a moment he had seen more of its nature.

Through the caked and thinned dust, he could see that it was no more than a transparent medium like a jelly. Grace was shouting at him through the phones.

"Darling," she screamed, still running, the tentacle elongating with her, "It's not stopping me. Burn it off. Cut it loose. Stop it before it does something!"

John had hesitated firing either the explosive pistol or the heat beam at it for fear of injuring Grace and not harming the monster at all. Then he touched the button of the heat pistol.

Ordinarily a heat beam of that size and capacity with its strong charge will cut through an inch-steel plate without any trouble at all. The tentacle holding Grace did not even feel the heat. The pistol flared and nothing

happened.

Grace stood still now, horror and fear in her eyes being replaced by courageous calmness. The tentacle made no restraining efforts and this attributed to her bravery. If she moved the psuedopod moved with, encircling her but not holding her. Apparently whatever the beast was it had a curiosity of its own.

The futility of trying to do anything to it with their puny weapons struck them both at once.

Several times Grace walked farther away from the pit toward the mouth of the tunnel. The arm continued to embrace her but not to restrain her. John followed untouched.

"Keep walking," he said. "We'll see if we can get to the opening."

"O.K. darling," Grace said, her courage back now that the thing had not attempted to injure her. "But when we get there, do something—anything! 'I can't take this forever!'"

THEY reached the cavern's opening. Whatever the thing was, it seemed intelligent to a certain degree. Both Grace and John felt the subtle impact of an alien mind emanating from the peculiar monstrosity's extension, as if it was trying to understand them.

Suddenly John said:

"Honey, I'm going back to the ship. I'll land it here. We'll think of something by then. That's all I can do."

"Don't leave me, John, don't. It might drag me back into the cave."

Without a word, his heart tearing in two within him, John turned and ran like mad. He was oriented correctly and he knew where the ship lay on the other side of Bergen's Rock. Leaving Grace alone with the thing was terrible—doing nothing was still worse. They had nothing that could

touch the beast or whatever it was. As he ran toward the ship his mind seethed with a thousand and one plans. There was no weapon at all aboard, outside of the puny handguns, which would have no effect whatsoever on this hideous beast.

As he ran the scientist portion of his mind could not help but speculate. Was it an organic creature? Could it be alive in the conventional sense of the word? He answered his own queries. Of course it couldn't. Nowhere in the universe had protoplasmic organic material managed to exist in airlessness.

There was only one other possibility—two at most. It could be silicon-based. He rejected this on the grounds that the planetoid was certainly not a silicon-bearing body. Or it could be a colloid of some other substance. What? There was no answer.

It seemed as if an eternity elapsed before he sighted the ship gleaming so brightly in the sunlight. Less than a kilometer away, half way around the planetoid's diameter was Grace, prevented from moving by a living non-organic jelly! Goaded by the thought and grateful that he had worn the magnets which allowed him to run so rapidly, John tore open the airlock, disregarding the crude anchor.

In a moment he was at the keys of the rocket console and the *Tellus-243* was lofted in an instant. He was no expert pilot and he overshot himself completely but driven by desperation he performed the Herculean feat of bringing the rocket where he wanted it—not a hundred meters from Grace.

John half-expected to see nothing, but happily she was still standing unchanged, the pseudopod unmoving, still encircling her as if engaged in study of its own.

The last few minutes had made her

almost speechless with terror. As long as John had been with her she had felt unafraid. But even the few moments he had taken to bring in the rocket had terrorized her completely. Through his phones John could hear her little utterances of terror.

"Don't be afraid, dear," he said, "I've got an idea that we can take care of this thing. Just don't move. Don't even think a thought. I'll give you the idea now. We'll try a little fuel on him if he doesn't let go soon."

DASHING back to the storage room of the clumsy little craft, John dragged out a couple of hundred meters of flexible metal hose. It was awkward to handle, but it was the only answer. Quickly he attached one end to a fuel supply manifold. He opened the valve connecting it to the forward tank. All that would be necessary now would be to touch a pump button and he'd have a super flame-thrower of nitro-compounds.

He brought out the hose through the airlock. Grace had not moved nor had the pseudopod attempted to move her.

Wired to the nozzle of the hose was a small sparker, a battery-condenser set-up that would provide just enough heat to ignite the oxygenated stream of rocket fuel.

"Darling," John called, "I'm going to try it. I'll try cutting the damned arm off the thing first. It's not touching you so when I give it a dose of the flame, duck! Drop to the ground. Got it?"

"If this thing stays around me much longer, I'll blow my top," Grace said, and the tension in her voice was only masked by deliberate effort. But her husband knew what she was suffering.

Twenty feet from Grace, John laid down the hose. He dashed back to the

ship. He ran inside and touched the pump button.

Then he tore back out again, running wildly for the hose, from the flexible metal nozzle of which the transparent fluid was already flowing. He stooped and picked it up, ran to within a few feet of Grace and touched the sparker.

Soundlessly the half inch of rapidly running fluid nitro-compound changed into a jet of flame of unbelievable ferocity and intensity. Supplying its own oxygen it burned like the fires of hell, with a brilliant white light like that from burning magnesium.

The flaming jet struck the pseudopod. Instantly it reacted. It swept back into the cave with incredible speed and had not Grace dropped when she did she would have been swept with it. Apparently it was unable to act with infinite speed for not an element of it even flicked her.

A moment later in spite of the clumsy suits, Grace had thrown herself into John's arms. He could hear her almost hysterical sobbing as the relief of freedom came to her.

Carrying her light and slender bulk back to the *Tellus-243* was the work of a minute. The flaming torch still writhed and twisted, pouring its eerie light over an eerier scene. The landscape which before had seemed so barren now held the menace of a terrible unknown, a potential which neither Grace nor John could imagine.

But it made no effort to leave its hole. The cavern opening remained quiescent.

As soon as Grace had recovered enough to talk calmly, John started to talk with her.

"Honey," he said, "what are we going to do about it?"

"Do about it!" Grace echoed stormily. "What do you mean. We're not

going to do a thing. Let's get on the other side of this horrible rock and load up. The sooner we can get away from that—that thing, the better off we'll both be."

"Grace, we can't leave that thing alive—or whatever it is. Supposing somebody else runs into it?" He reached out and shut off the fuel valve. The magnesium-like flame died.

"Nobody's going to try and do what we did. And besides we can have this charted." Grace said.

"You know what that'll mean. Sooner or later this spot'll be hit by somebody—in fact, company men if we can show them ore samples."

"Let *them* burn it out, John. Let's get away from here."

"Be reasonable," John said quietly, adopting his most soothing air, "We can give the thing a blast of rocket fuel right in the pit—and it won't hurt us a bit. And it may do a lot of others good—besides us."

Under his influence and mollified somewhat by the time that had passed, Grace finally agreed.

JOHN hopped into a suit and went through the airlock again. Very cautiously he approached the mouth of the cave. He could see nothing within it. Picking up the hose, he carried it closer. He pointed it into the cave and anchored it with a metal rod shoved into the dusty soil. Supported in that manner about eight inches above the ground it would spray its deadly load right down the tunneled aperture.

He returned to the ship.

"Are we placed right?" he asked Grace when he had taken off his suit. "When that thing goes, you know what a blast it'll be. Are we clear?"

"Yes, we won't have a thing to worry about. The cave certainly can't



go." Grace was smiling. Once the horrible shock had passed she could no more be fretful than a comedian.

John went to the valve that he had closed and reopened. Fuel poured into the cavern's mouth. In the number three tank that was being emptied there were eleven tons of liquid nitro-compound the most powerful rocket fuel devised by man. And the pumps drove it furiously in the cave. The feeble gravitation of Bergen's Rock carried it to the pit where the bulk of the monstrous inorganic "life" waited.

John fired through a gun port with which all craft are equipped, with a heat beam. The beam licked out from the light projector and caressed the transparent vapors at the mouth of the cave. There was a brief flicker of light as it ignited. Nothing happened for a moment, as the flame traveled the two hundred meter length of the tunnel. Then Grace and John were stunned by the magnitude of the ensuing event.

As if to indicate something was about to happen a cloud of dust heralded the explosion! A fiery dusty puff squirted from the jaws of the hideous chamber in the planetoid.

Following it, there erupted the fury of hell. A tongue of flame a kilometer long roared from the cave. Mingled with dust, it created a spectacular, impossible sight.

Their arms around each, Grace and John watched the momentary fury. Nothing was like this.

"What a horrible dream," Grace said, white faced and trembling. "John, was it real?"

"Look at that," he said abruptly.

From the cave's gaping, dust-shrouded opening, the remnants of the tentacular life streamed! Mixed with burning rocket fuel it poured and

writhed in weird gyrations. But it was not complete. The greatest part of it was burnt to nothing and the rest went with it. It looked as if it was a gigantic bubble of steam on top of a hot-plate.

Gradually, as the all-consuming, flaming, blazing fuel enveloped it, it died—or did what was a first approximation to dying. The menace was gone.

At the happy sight, Grace's face wreathed in smiles, turned to John. "Well, Professor," she said mockingly, "what's your theory on this?"

"My dear young lady," John said pompously, and then spoke seriously, "It can't be carbonaceous life nor silicaceous life. Because it exists on this planetoid at such low temperatures, it certainly must have been in a low state of nervousness. I think that when it surrounded you, darling, that it had shot its bolt. There probably wasn't energy enough in it to do anything else. It couldn't have fed on heat or radiation. It must have gotten what sustenance it needed from the surrounding rock. We are undoubtedly the only people that have seen this thing since it was 'born,'—I use that word loosely. It may have been created. Who knows?"

"Why don't you write a paper on it when we get back, dear? They'll think you're a scientist."

John grabbed at her playfully. "You can't talk that way to me, to your lord and master!" He held her and mocked her struggles. After the tension of the preceding hour, any horse-play was welcome.

Finally they went to work, removing the burnt-out flexible metal hose. Tightening the valves, closing the air-lock and in general, putting things in order.

It was the work of minutes for

Grace to deliver the *Tellus-243* to its original position on the 'roid, the sunlit side this time. Even a touch of the sun was cheery after that ordeal.

**JOHN** went to work immediately with a welding and cutting torch after venting the empty tanks with compressed air and making sure they were empty. He cut a crude entrance-way and shute into which they could pour the surface dust.

Tantalum ore was dragged in the lock which they left open after shutting off the air. It was annoying to have to work again in suits but the thought of their recent action made anything seem easy. In a matter of hours the fuel tanks had been jammed with tantalum ore and the ship was a mass of dust from top to bottom.

The only untouched spot was the control panel which had been adequately covered. Finally the job was done.

The airlock was closed, air pressure was built up, the radiant heaters were turned on and Grace and John started the clean-up. With a hastily improvised vacuum cleaner in the form of a

hole in the side of the ship through a port, there would be no problem to cleaning it thoroughly.

As soon as the *Tellus-243* was space-borne, the two of them put on their suits again, and opened the vent. The swirling air escaping from the ship took care of the dust. Things were back to normal.

They looked through the port, gazing at the harmless piece of rock they had named Bergen's Rock.

Her head against John's shoulder, Grace said:

"Darling, let's not call it Bergen's Rock. I don't like Dad to have this for a monument. It's a rotten, horrible place and only the thought of what we can do with it makes me even able to think about it at all."

"I'm game," John said, "but what can we call the damned thing anyway?" He moved over to the instrument panel to begin locating its position accurately.

"It's simple, John. 'Amoeba 'Roid.'" John laughed as she put her fingers to her nose in a definite gesture of contempt.

THE END



*The* **CLUB HOUSE**

**Where science fiction fan clubs get together.**

**Conducted by ROG PHILLIPS**

**I**T'S an honor to welcome the new fanzine, **LOKI**, which was announced a short time ago. It fully lives up to expectations. The editors, Mr. Gerry de la Ree, and Mrs. Genevieve K. Stephens, have a display of names on the contents page which is rarely attained by any fanzine in any one issue. The professionals who contributed to this first issue are Eando Binder, David

H. Keller, Richard S. Shaver, Dorothy Quick, and the late Stanley K. Weinbaum. The fan contributors are Joe Kennedy, Jack Zatt, Albert Toth, Lin Carter, Mari-Jane Nuttall, Robert Lee Farnsworth, Stephanie Grace, and the editors.

The price of **LOKI** is going to be ten cents. I thought they would have to charge for it. Paper costs money. So do postage stamps. Twenty-

eight pages of expert mimeography with two covers. Gerry and Genevieve are going to have a hard time keeping future issues as good as the first.

**SPACEWARP:** The March issue marks the first anniversary for this zine. Rapp says, "We're not trying to put out the best fanzine in fandom—we're trying to put out the kind of a zine that we like to read." Well, in my opinion Rapp and his gang have succeeded very well. It's human. It's fun. And that's what counts. For example, there are two articles in this issue, one titled "Lovecraft? Phooey!" and the other, "Lovecraft? Hooray!" Part III of the serialized contest story, "The Great Stf Broadcast" is perpetrated by Bill Warren. If you remember, the first part was by Bill Groover, and the second by Wilkie Conner. It's a story about John Upperberth, editor of FITS (Frankly Incredible Tales of Science).

**FANTASY-TIMES:** Thomas S. Gardner begins his review, "1947 in Science Fiction", with *Amazing Stories* in this issue. Dr. Gardner has the perspective that comes only with long years of reading science fiction. There are very few reviewers who can say that this story is reminiscent of 1928, or any other year. He can and does. The regular feature, *The World of Tomorrow Today*, by Ray Van Houten, carries the interesting bit of news that the world's land speed record was not only broken but completely shattered lately by a rocket-powered, rail-guided sled, which went 1,019 miles per hour.

**KAY-MAR TRADER:** Feb.-March: K. Martin Carlson states that this is his last issue, and that he is turning everything over to Paul Cox, 3401 Sixth Ave., Columbus, Georgia. Not knowing Mr. Cox's plans we can't say anything about the future of the Trader at this time. Mr. Carlson will carry on his duties as Sec.-Treas. of the NFFF. There is an added page this time by the FANDOM ATOMIC INFORMATION FUND, c/o Gordon M. Kull, 1608-11th ave., San Francisco 22, Cal. I can't quite understand what it's all about. It's a message from Albert Einstein about the EMERGENCY COMMITTEE OF ATOMIC SCIENTISTS. They have what they call a minimum program that will cost a million dollars. This program aims at creating "a clear and widespread understanding of facts and implications of the atomic discoveries" so that "with such understanding, the American people will choose from among the many paths to reach a peaceful solution, and move toward that solution instead of war." Now, what I can't understand is why a million dollars is needed. Surely these scientists are not holding back until they get paid for their trouble! Not only would *Amazing Stories* pay any one of them for the material they wish to present to the American people, but there is hardly a publication in America that wouldn't pay any one of these atomic scientists for the privilege of printing whatever they wish to say. In my opinion and that of Mr. Palmer there has been too much silence from

those who built the atomic bomb. We NEED first hand reports and opinions of these men who created the instrument which, in all probability, is the only thing holding back the Russians at the present moment as they see the western powers lift their feeble, rusted armor and rattle it defiantly in the direction of the Soviet hordes. If a million dollars stands in the way of these men talking to us and educating us, when they could get real money for the words it takes to talk to us and educate us, when any fanzine would be honored to print one word from any of them, and when any stf prozine, any newspaper, any magazine, would feel honored to bring the ideas of these scientists out into the open for frank discussion, I would like to know WHY! Why must they have a million dollars? For paid ads? Nonsense! Why should they pay for space when they can get paid handsomely for simply USING it! Let them speak up! Let them tell us what they know and what they think!

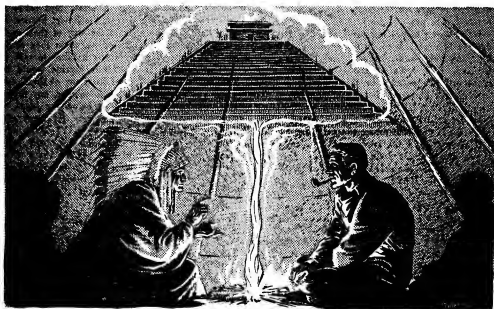
**THE MUTANT:** the official organ of the Michigan Science Fantasy Society. This club shows great promise. Ben Singer, Art Rapp, and George Young share the editorial duties of the zine, with Gerald Gordon becoming official assistant editor next issue. The March issue is Vol. 1, No. 3. The MSFS meets about every two weeks, on Saturday or Sunday. The first meeting was in Detroit. The first statewide meeting was held January 30th. The third state-wide meeting was held in Saginaw at the home of Art Rapp. Present officers are Ben Singer, prex; Ed Kuss, vice; Art Rapp, sec; George Young dir. of pub.; Bill Groover MUTANT ed.; Jerry Gordon as. ed. You don't have to live in Michigan to get this zine. If you do live in that state you MUST. Why? Cause I said so!

**NECROMANCER:** March, is the second issue of this excellent zine. David A. MacInnes, his wife, and two dogs, publishers. Page 3 has something that every stf collector should GET—a reproduction of the cover of the first science fiction periodical, called the Frank Reade periodical. The feature story that issue was "Driven Adrift in the Frozen Sky", by the famous author "Noname". The date on the cover is March 10, 1894. Bob Frazier authors a three page article on this first stf periodical. Seventeen pages and an excellent cover make this a worthwhile zine.

**LUNACY** #11 comes out regalelength this time. George Caldwell is really going to town on it. The editor, Vernell Coriel, Marion Zimmer, Bob Stein, Art Rapp, and others make up the issue. The Constitution of YF (young fandom) appears this issue. This is a club whose purpose is to aid and advise young fans and encourage them to become active and worthy members of fandom. Dues are 50c a year. Dal Grant, Box 14, Lewiston, Idaho is sec-treas.

(Note: This department was shortened by necessity this month, but next month we hope to include all the zines.)

# SCIENTIFIC



The Sioux story-tellers relate many stories of a most powerful giant who lived in the land of the decotah. His name has been forgotten, but not his appetite, for it is said he ate not only people, but whole tribes. He lived at the top of a large hill where he always kept a fire burning, and he had two pets, a large snake and a pheasant. (The crest of the Cocomo or Serpent Monarchs of Yucatan.) He feared birds, however, and he was killed by men dressed as birds. When his stomach was cut open, four tribes marched out and marched to the four directions.



When the Mexican government began to use some old lava beds as a rock quarry for the purpose of road buildings, graves were discovered in which the body was placed in a contracted position. Is this a connection with the Pan-people?



From this city, which had waterways for streets, its people fled to a land where they established the mysterious City of the Seven Caves. But where?

# MYSTERIES

THE MYSTERIOUS EASTERNERS

By  
**L. Taylor Hansen**

"ONCE long before the days of our grandfathers," the aged Sioux story-teller had begun, as the light of the small campfire in the center of the lodge flickered up into his angular, wrinkled face, "there lived in the land of the Dacotah, a most powerful giant. His name has been forgotten, but his voracious appetite shall never be forgotten, for it has been said that he ate not individual people, but tribes."

"How many?" I questioned. "And what were their names?"

"I do not remember," he answered with a trace of sadness. "Even when I was young, I no longer listened carefully."

Then after a long silence he continued:

"The giant was not altogether evil. He had two pets. Strange pets they were too. One was a large Snake that lived in Caves. The other was a proud Pheasant." (The crest of the Cocome or Serpent Monarchs of Yucatan.)

"The giant lived near a large hill upon the top of which he always kept a fire burning. Now after the giant had eaten many tribes, the people determined to kill him. The giant had only one weakness. He was afraid of birds. So they waited until the rains came and the flood waters of the rivers poured into the Cave where the Snake lived, and thus kept the terrible beast from coming to the aid of the giant. Then they dressed up like birds, hooted bird calls and blew on bird whistles. This frightened the giant so that they could kill him, and when they cut open his stomach, four tribes came out and marched to the four directions."

Thus can be segregated another legendary fragment of the "giant power." Again we see its characteristics: a sacred fire, the connection of the Snake with Caves, a connection with a flood, apparently slave-taking characteristics as well as the later freeing of the slaves after the vanquishment of the power, and the defeat of the giant power by a bird totem.

And perhaps the most startling thing about this fragment is that it comes down to us through what is apparently a Quiname or Snake tribe, who no longer recognize it for what it is, a bit of enemy lore. What captured woman incorporated this fragment by teaching it to her children by a Siouan man?

If these Quiname<sup>1</sup> culture traits could be mapped as a complex much like Wissler<sup>2</sup> has

mapped the Sun-Dance, we might be able to better understand the local points at which the giant-power seemed to leave its imprint, and the later migrations of tribes from those points. This might be one scientific approach of learning more

<sup>1</sup>Quiname is the Nahua name for the Easterners, otherwise known as the Cocomes, Chanes, Culebras, etc. Translated, the names usually mean either "The People of Pan" or "Serpents."

<sup>2</sup>Clarke Wissler made a most interesting culture-graph of the Sun-dance. Taking what had always been considered a Siouan culture-trait, he divided it into its component parts. In the center he placed the name of the tribe which had the greatest number of the ritualistic parts still intact. These were 1) scouting for the pole as if it had been an enemy, 2) attacking it, 3) the part in the drama played by a girl named "beautiful enemy," 4) certain fasts, 5) certain drinks to be made in a certain way, etc., etc. This tribe proved to be the Algonkin Arapaho. In the second concentric ring beyond that he placed the tribes having the next highest number of traits intact. These proved to be the Algonkin Cheyenne and Gros Ventre along with the Siouan Crow. In the third ring the Algonkin Blackfoot was found to belong and in the 4th, the Algonkin Cree along with the Oglala Sioux, etc. Thus we learned that the Sun-dance was undoubtedly an Algonkin trait anciently borrowed by the Sioux.

The only criticism which can be extended by the author, is that Wissler did not carry his study far enough. I would like to see it include the Flying Dance described by Oviedo who saw this performed on a pole at Nicaragua, the Otomi Volador Dance, the similar Aztec Flying Dance dedicated to the God of Fire, while the Netotliltli or Bird Dance was a dance having many similar features. This is interesting because eight ropes were used. Four of them supported the crossbarred top while the other four were wound around the pole thirteen times before being passed through the holes at the top of the frame. The thirteen turns of the rope and the four dancers represented the Nahua cycle with its four divisions of thirteen years. But was it Quiname before it was Nahua or Algonkin? That it comes on the Aztec festival of the Fire God would seem to suggest it.

about the Mysterious Easterners.

Another approach could be that of taking note of everything that was said of the giant power, which was without doubt that of The Serpent and of The Venus Calendar, since they are all three mentioned almost interchangeably in ancient manuscripts, and then of running down any similar legends or legendary fragments for the additions which they might make to the pattern. For example, we have the story that the Quinames were defeated by their fondness for liquor. The Nahuas succeeded in getting them drunk at a great social gathering, and then turned upon them, killing them, and taking control of the state after one night of violence. The same story comes down through the Chichimec Annals as the means which they used to defeat the Toltecs. The additions are interesting, for it is said that two Clowns were used to give out the drinks and entertain the doomed enemies. We of course, recognize the Pueblo Clowns, but what the inferences are to be drawn has certainly not been decided. Were these figures a Nahua invention, being an attempt to ridicule the Chichimec heroes, and later accepted by an amalgamated group?<sup>3</sup> Or is it possible that the whole "twin" complex was first of all of Atlantic origin?

We must recognize the fact that the Toltecs are an early disputed tribe. It is hard to decide whether they were Nahuas or Easterners. Xelhua,<sup>4</sup> their early hero who is supposed to have built the great unfinished temple or pyramid as an insurance against a second coming of The Flood, certainly has many Quiname characteristics. Most authorities now look upon the Toltecs as the great Nahua civilizers of their golden age.<sup>5</sup> Yet there may have been a Quiname substructure in The Valley of Mexico which would explain perhaps The Toltec and later Aztec amalgamated characteristics. Is it possible that the civilization now being dug out from under the old lava flow is that of the Quiname, or giant-power, which is said to have been ended by a rain of fire from heaven?

This civilization was discovered accidentally, as it were, when the Mexican Government began to use some old lava beds as a rock quarry for the purpose of road-building. Graves were discovered in which the body was placed in the contracted position.<sup>6</sup> The cemetery was then electrically lighted and today, one can walk through it under the unremoved lava cap.<sup>7</sup>

Yet this was not all that was discovered. A pyramid, apparently in ruins before the lava had descended upon it was also discovered. Was this the artificial mountain of Xelhua?<sup>8</sup>

One other bit of evidence seems to connect Xelhua (Ancient Xel or Yal) with the People-of-Pan, known to their enemies as the Giant-power of the Quinames. That is that some of the old manuscripts say that the Totonacs, an admittedly pre-Toltec tribe, set out from Chichimotoc, or The Seven Caves, with the Xal-

pan-ecs, which plainly connects the name of Xel with People-of-Pan. It is further stated that when they left, the Chichimecs were in possession of The Ancient City of The Seven Caves. May we draw the inference from this that the Chichimecs stormed and took The Quiname Capital, driving out The People of Pan through the Seven Caves? Was this, then, the triumph of The Allies of the Twins and the Nahuas over the old fire-god, and did it take place before or after The Flood?<sup>9</sup> And last, but not least, was the City of The Seven Caves, The Quiname Capital, or was it the well-remembered Tula in its various spellings?<sup>10</sup>

Although it seems logical to believe that the Quinames were overcome after The Flood, as Nahua legends seem to suggest, there are some facts which seem to deny this. The Tzendal

(Continued on Page 152)

<sup>3</sup>It seems probable that this is a Nahua attempt to ridicule an enemy trait since Twin Clowns are an important ceremonial part of the dances of the now extinct Central American Chorotegans. "Twins" may have been originally Quiname, as the Yaquis will tell you that very anciently their Twin Clowns were of the Serpent and drew their power from the Great Water Serpent. (See A Yaqui Village by Spicer. Joyce: Central Amer. Archaeology and Herrera.)

<sup>4</sup>Xelhua, like Votan, is called The Great Architect, and is said to have built a pyramid which was to reach to Heaven, but was unable to complete it on account of rain of volcanic ash and a flood. (See Boturini, Idea de una Hist. Humboldt: Vues, etc.)

<sup>5</sup>It is interesting to note how the Toltecs are always spoken of as the great agricultural tribe, having an agriculture beyond anything which survived their conquest. If we had a better description of their plants, this might link their origin to that "Land of Maize" which anciently existed in South America. As it is, we can only suspect it from their legends, but may possibly, never know for certain.

<sup>6</sup>The contracted or foetal position of burial would seem to suggest that these long-headed people had some connection with the Mimembres of Gila, but this point may have to wait much future comparison. (Archaic Culture Horizons in the Valley of Mexico by A. L. Kroeber, Univ. of Calif. Press.)

<sup>7</sup>This cemetery is at present to be seen on the outskirts of Mexico City and constitutes a far more intriguing sight, though not as well known, as the "Floating Gardens."

<sup>8</sup>See Beyer: *Memorias de la Soc. Cient. Antonio Alzate XXXVI No. 1, 1917.* Also Gamio *Am. Anthr. XXII 1920.*

<sup>9</sup>See Torquemada: *Monarqu. Indios, Vol. 1.* Also Orozoco y Berra: *Geografia.* (Both now out of print.)

<sup>10</sup>Some of these spellings are Tollan, Tulan, Turah, Tulan Zuiva, etc.



**A**RE the tales of strange human powers false? Can the mysterious feats performed by the mystics of the Orient be explained away as only illusions? Is there an intangible bond with the universe beyond which draws mankind on? Does a mighty Cosmic Intelligence from the reaches of space ebb and flow through the deep recesses of the mind, forming a river of wisdom which can carry men and women to the heights of personal achievement?

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(Continued from page 150)

Calendar in the names of the days is said to hear out the "ages" in their order, and it is curious to note that Votan the great figure of The Flood, is given third place. Before him come the names of Imox or Mox and Igh or Ygh. Following Votan we have Chanan or Ghanan which is of course, The Chanes, or Serpents. The difference in spelling comes from the difference in locality between Chiapas and Soconusco.

This list may be most profitably compared to those of The Quiche and the Cakchiquel.<sup>11</sup> Imox which is first in the Tzendal is again first and the interpretation given as "Great Fish" or "Swordfish." Ig is again given second place and the interpretation is given as meaning "spirit" or "breath" which definitely refers to the Wind-god, and explains the persistent E-E quality of that name in its various dialectal changes. Instead of Votan in the Quiche and Cakchiquel, we have Ak-Bal whose interpretation is given as "chaos" but which is certainly the name of Ek Balam, The Black Tiger. We will remember that he is said to have been an earlier figure than Votan, and this fact would make this account seem more accurate than the Tzendal. It might also suggest that the subjects of Ek Balam's conquests, the Quiche and Cakchiquel, did not regard his rule as entirely beneficent. Or, that it was so beneficent, that the later conquerors, either Quat or Kat, The Great Lizard (Dragon?) as number four; or Can, The Snake (Chanes) as number five; were forced to rename his period in a manner calculated to throw discredit upon its brilliance. Which, in the opinion of the writer, is nearer the truth. Especially so since the Quiche (who judging by the name, along with the Kakchique, are of Chichimec ancestry) still revered the name of Balam as ancestral to their tribe.

Upon the other hand, we would not expect the Tzendal to stress Ek Balam since the Tzendal was the tribe of Votan. His book is said to have been translated from that tongue and today the best accounts of him come down to us through its archaic and beautiful phraseology. The period to follow Votan is the Chanan Period in the Tzendal, which we recognize as the Chanes. This suggests that the Chanes were not the people of Votan, but a later group. Some early manuscripts have reported that during Votan's absence, when he went east to the old oceanic homeland, another tribe arrived in whom he recognized the distinguishing characteristics of his own Culebras, or Serpents. Were these The Chanes?

Thus we seem to have several civilizations in succession, first, The Great Fish; second, the Wind-god; third, the domination of Ek Balam

all before that of The Great Architect. Furthermore, Votan's name for his people of Culebras certainly has the later Cul (feather) in a prominent position, and suggests that already the totem of Serpent has long been amalgamated with the Wind-god.

The days in the Aztec calendar strengthen the others and throw some interesting sidelights upon the first age or "Great Fish." The name of the first is Cipactli. It is sometimes pictured as an animal with a large head whose open mouth is armed with great tusks. The head resembles that of The Dragon, and the tusks suggest this ancient characteristic of the old Atlantic totem. Sometimes however, it is pictured as a fish with flint knives upon its back, or as a kind of giant lizard with a long tail curled over its back. It has been translated as "Great Fish," "Giant Swordfish," "Sea-Serpent armed with harpoons" among others. Thus again we meet the strange confusion which exists among the three sea-totems of earliest antiquity—The Great Fish, The Dragon and The Serpent, causing one to wonder if they were three distinct entities at all, or phases of one world-encircling colossus.

Like the other calendars, the second period is that of the "Wind," the third or disputed one is "House," while the fourth and fifth are "Lizard" and "Snake." In its entirety, the Aztec list is almost identical, particularly to the Quiche and Cakchiquel.

The persistence of the old legends of the north, here repeated in the three most prominent calendars, that the "Wind" defeated the "Sea-Monster," thus begins to take the color of a definite historical remembrance. Was the ancient kingdom overrun by the children of the "Wind-god" during the long period of its dessication by the ocean over which it had ruled for so long? The Chilan Balam seems to suggest this very line of thought.

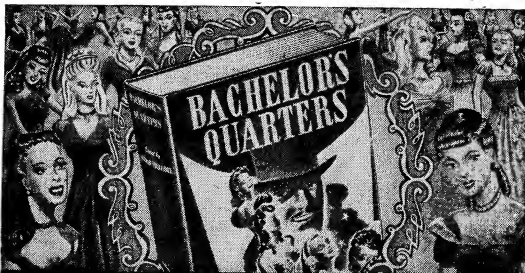
Thus it would seem that the dawn-power of Votan was not the dawn-power after all, but the amalgamated totem of a much earlier Atlantic War, and Votan was not the Emperor of the Megaliths since three other civilizations preceded him. Two of these may have been of Chichimec extraction, but the First, the mysterious Ancient-Totem-of-the-Sea, is perhaps beyond identification.

It is this civilization which is probably The Megalith, and it is this power, perhaps already over-run by enemies and dessicated by the continued loss of its homeland, when the pyramids of Egypt were being constructed, which seems to haunt Amerind legend. From those thousand fragments, we can almost see an ancient capital on a sea-bench or lake-island, which had waterways for streets like the later Tenochtitlan of Mexico. From here the people fled to a land where they established the Mysterious City of The Seven Caves. Where were these two places?

(Concluded on page 154)

<sup>11</sup>All of these are ancient civilizations of Central America.





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It is to the dedication of the solving of this mystery that we are pursuing long-forgotten figures and weird Indian gods through the past. And as we now begin to realize that the veils which some have considered impenetrable, are lifting, be it ever so little, one of those lifetime thrills which comes to the mind with a scientific bent as he pursues his research, even as the explorer pursues the horizon into the unknown, begins to steal upon us.

Yes, long before the memories of their grand-

fathers, perhaps there did live in the land of the Dakotahs a giant-power, who built pyramids, kept a sacred fire, and enslaved the neighboring tribes. So perhaps, through study not dissimilar to ours, the white man may some day come *not* to laugh at what he considers childish fancies, but to gather the tiniest crumbs of information from the old, red-skinned sage, who perhaps has never known many of the inner meanings of the things whereof he speaks.

## TRICKS WITH TORQUE

**I**T IS hard to think of any one machine that has more changed the picture of the world than the gasoline engine. The internal combustion engine accounts for more power output in the world than even electrical energy generating plants. Its high horsepower-to-weight ratio gives it a tremendous advantage over any other power source that can so easily carry its own fuel. It has one major drawback besides its relative inefficiency and that is the fact that at low speeds it delivers low torque. Torque is defined as turning effort. It is literally "what makes the wheels go 'round.'"

Since this is so with regard to low speeds—an automobile engine idles at around four hundred revolutions per minute—the internal combustion engine must operate at high speeds to provide great forces in the form of torques. But these great forces may not, as in a car, be easily applicable, or the speed of the vehicle at which the great torque is needed, is low.

The answer to this problem of course is obvious. Just throw in a gear train of a suitable ratio between the engine and the object to be driven and the problem is solved. In addition a clutch is required so that the initial effort may be applied gradually to the driven member. That is how automobiles have been operating for the past forty years—engine—clutch—gear train.

Gradually improvements have been made over the years until now it is hardly recognizable that the clutch and gear trains exist in modern cars. In the past ten years efforts have been made to eliminate manual selection of the desired gear train entirely. This has been done.

First the clutch has been replaced with what is known as a fluid coupling. It is the equivalent of two sets of fan blades running parallel to each other in a bath of oil. This device then connects, entirely through oil, the engine to the gear train. Nevertheless the gear train exists and various automatic gadgets select the suitable gears. This is the basis of almost every type of automatic shifting device.

But with one of the new cars this year, science has finally succeeded in creating a true "torque converter." This torque converter is the equivalent of an automatic clutch and gear train. It replaces them completely. It functions, and this is the amazing thing, from any low speed to any high speed, delivering the necessary torque to

the wheels of the automobile in exact accordance with the torque-demand of those wheels.

**A**CTUALLY there is nothing really astonishing about this infinitely variable gear which is what a torque converter really is. It is in essence a pair of fan blades immersed in oil and spaced by a stationary guide blade, so that the oil may be directed much in the manner of steam in a steam turbine. In fact, a torque converter is a sort of turbine. Depending upon its design, it can accommodate the needs of, and equal an arrangement of gear trains, from a ratio very high to a ratio very low.

This means that the driver of the automobile does nothing but operate the accelerator to drive the car. Beneath his feet there are no gadgets automatically shifting gears—there are no gears! Instead the engine runs at whatever rate is necessary to provide adequate speed and power to the moving vehicle. In a rut when stuck, the car's engine turns over at high speed and pumps high-pressure oil against the turbine blades, giving the same effect as a car in "first" or "low". When on the road the engine turns over at the rate demanded by the speed. There is no "slippage."

In the new car mentioned actually there is a small gear train left—for reverse. And the torque converter is a little more complicated than has been indicated—it involves some rather complex pumping mechanisms, but basically it's a good job and it is a forerunner of what is generally coming in the automotive age.

It was a favorite habit of electrical engineers to laugh at the automotive men because the gas engine was so awkward and required so much gearing compared with a simple electric motor. Well, the electric motor is still better than the gasoline engine—but the torque converter has done a lot to level the differences. The only way that the electrical engineers can overcome this is to create a suitable electrical energy-storing machine—to equal the gas tank!

## MAYAN MATHEMATICS

**I**T IS a well-known fact that the magnificent civilization discovered in South America and Central America by the Spaniards, had a highly developed reckoning system. It is common knowledge that both the Mayas and the Aztecs had elaborate accurate chronological tables, indicating not only a highly developed observational

astronomy but also an excellent theoretical one as well.

This is of course borne out by the numerous tablets, and inscriptions that have been found. To the historian's mind, the striking thing about these mathematical findings is not that the ancient Americans were able so well to calculate, but rather that they possessed knowledge of zero, that mysterious, inscrutable symbol.

When the history of mathematics is considered, it is a surprising thing to learn that it wasn't until some time before the Dark Ages in Europe that the use and knowledge of zero in calculation came into being. Prior to this time man had used the most awkward forms of numerical symbols with which to calculate. While Arabic numerals in themselves were a major contribution to European reckoning, they still are not of the significance that is found in that one symbol—zero. It is possible to have a symbol system entirely unlike ours and still be able to perform intricate and difficult calculations. This is true of the Mayans. While they lacked a simple, easily manipulated mathematical symbology such as that afforded by Arabic numerals, they did have the symbol zero, so invaluable for abstruse calculation.

This, coupled with their counting system based on twenty, enabled them to perform veritable prodigies of mathematical problem-solving. It is almost impossible to do much in algebraic analysis without some such system—in fact, elementary arithmetic is seriously impeded and remains the property of a singular group in any social organization unless such elementary knowledge of reckoning is widely disseminated. In the Mayan civilization, while every farmer and worker did not know mathematics, many of the workers in manufacturing pursuits did. This contributed incalculably to their development. In fact, it is hard for us to see why, with this knowledge, they did not entertain a rudimentary machine-system involving the creation of the wheel. Indeed they may have, for it was announced not long ago that certain archaeologists had found toys created by the Mayans which contained the elements of the wheel and axle. Why this discovery was never adopted practically, it is not known.

**R**EGARDLESS, the Mayans were a highly developed people in general, mathematically. It is a known fact that they were able to solve certain quadratic equations of the basic type and this involved a knowledge of the solution of irrationals. The Mayans did not understand the extraction of any other roots than the second, and that not too clearly, but this in no wise diminishes the respect we have of their general mathematical capabilities.

We are too prone to congratulate ourselves. It does not necessarily follow that the modern civilization of which we are so proud originated everything of theoretical value. The Mayans were a great civilized people when most Europeans still worried about how many angels danced on the tip of a needle.

# SCIENCE STORIETTE

By  
**ALEXANDER BLADE**

**W**ILLIAM GILBERT, the most distinguished man of science in England during the reign of Queen Elizabeth, was a member of an ancient Suffolk family, long resident in Clare, and was born on May 24, 1544, at Colchester, where his father, Hierome Gilbert, became recorder. Educated at Colchester school, he entered St. John's college, Cambridge, in 1558, and after taking the degrees of B.A. and M.A. in due course, graduated M. D. in 1569, in which year he was elected a senior fellow of his college. He traveled in Europe, and in 1573 settled in London, where he practised as a physician. He was admitted to the College of Physicians probably about 1576, and he held several important offices.

In 1589 he was one of the committee appointed to superintend the preparation of the *Pharmacopoeia Londinensis* which the college in that year decided to issue, but which did not actually appear till 1618. In 1601 Gilbert was appointed physician to Queen Elizabeth, with the usual emolument of £100 a year. On the death of the queen in 1603 he was reappointed by her successor; but he did not long enjoy the honor, for he died on November 30, 1603, either in London or in Colchester. He was buried in the latter town, in the chancel of Holy Trinity church, where a monument was erected to his memory. To the college of Physicians he left his books, globes, instruments and minerals, but they were destroyed in the great fire of London.

While making his living in the practice of his profession, Gilbert devoted all his spare time to researches in physics, confining them largely to electrical and magnetic phenomena, where he made several discoveries of importance. The principal one with which his name is properly connected was the recognition of the fact that the earth was itself a great magnet, and that the movements of the mariner's compass were due to that fact. He was the first student of the subject to use the term "electric force," and to point out that many substances besides amber could, by friction, be made to exhibit the presence of electricity on their surfaces. His treatise "De Magnetico," was the earliest publication of any importance in that branch of science. Naturally, some of the views and theories elaborated therein have not since been realized, but a surprisingly large proportion have been, for he was a close and keen observer, as well as a conscientious recorder of phenomena witnessed.

## IF WE GET A CHANCE!

**T**HAT phrase should convey to you the yearning heartbreak from a world's people, from the destroyed hopes and plans of a people who still plan and hope *anyway*.

But because you are one of the blind mutilated victims of the thing that destroys their hope . . . it conveys nothing!

Nothing comes to your mind from that endlessly repeated phrase? Only blank thought? It is true then, we are to have a chance *never*!

Nor for hundreds and hundreds of years have we had the ghost of a chance to be free of our worst parasite, the thing that makes of us a domestic animal as stupid as a cow, as docile, as hopeless.

But the coming of the flying saucers and our own development toward space-ship construction are the reappearance of meaning in that ancient prayer—IF WE GET A CHANCE!

These things must grow to general knowledge before we will be free of the powers of idiocy that enframe us in venom forever. (Exactly as Hansel and Gretel were framed in an oven door, and for much the same purpose, by much the same sort of creature. [But we spare the kids that detail when we tell the tale.]

We must have the chance *today*! There must be no maundering, no unthinking, presented to us by shorter rays on our minds, blanking all thought just when it was to be important—must be no tamper feeding our minds with misdirection. Those fools behind the tamper rays do not know the future *must* arrive. Must arrive or we will ourselves become as vicious and stupid as themselves!

"What is the chance?" You can ask! You don't really know?

"If you only knew!" That phrase, like the one "If we get a chance" echoes for those who know tremendous longing for the end of secrecy, for the strength of the many blind, given eyes and helping to avert the endless destruction caused by those who give us the blindness that makes the phrase *if you only knew* such a pregnant sound, burdened with the growth of a million years of hopeless longing for what cannot be.

God-like pleasure and God-like teachings, the Elder race's own wisdom of life denied us because the idiots of the caverns cannot understand that more minds make a better civilization. A *better deal for each*—that is the enemy's thinking, to the idiots. "For each, never say that."

"They" could never be included in such a phrase, for men are their enemies, and *each* to them means each demonic hidden evil of our life.

They are *not* included, any more than the great vampire bats of the caverns are included, and for the same reason.

They consider ordinary humans as beasts to prey upon.

"If we get a chance."

"If you only knew!"

Over and over I have heard these phrases and the infinite sad meanings that flow with it (tearful).

*Rock dust.* Endless expanses of cavern wonder-floor level. "*Broom one.*" "And the dust means miner's colic and you broom it up and breathe it in." "Why not the vacuum cleaner?" "Because they are too silly to have one. Slaves are cheap, vacuums are money."

Night after night after night all over the world these conversations go on—and not a one of them accepted by any psychiatrist as truth about the caverns—a reality! Why are not millions of such talks accepted?

Because those men who do not accept are themselves controlled and tampered and their minds cut to idiocy's level—to the same floor level broomed by the slave's wisp (of twigs).

Those men are *our educators*—and our education is a falsehood—a fabrication of age-old lies. Take *astronomy* and examine it for truth—then check the speed of light. For instance, Roemer nearly guessed the speed of light in several hundred years of stupidity ago (17th century). Do you think he guessed aright? They still use almost the same figure, after lying about it for centuries.

Do you wonder that a man says: "If we get a chance"?

IF, IF—it is such a very discouraging IF. Not because of the terrible power of the old weapons in our oppressors' hands, not because of the iron-bound secrecy about it all—BUT because you and your blindness defeat all our efforts to save even one fragment of the Elder wisdom for you! Your own educated stupidity is *not* an accident. It is a *present* from a venomous saboteur of all your future—that very "education" you pride yourself upon.

What large apes you all are! Trained for blind servitude to a something you will not see when it is pointed out. That reaches the vast proportions of complete mass hypnosis—by a parasite upon you so loathsome it is impossible to understand your inability to see its terrible effects upon you (*you* meaning "civilization" of the "modern" brand—so-called!).

**I** HAVE overheard people speak of me with candor—and understanding—to a point. "He is a man without education, and he is sure that *our* education is a fraud and a falsehood. It would be easy to believe in him."

*That far* they had gotten against their own hypnosis in understanding what I was trying to say in my writing. Further their blindness would not let them see—that I was the voice of every slavey in the world, of every mutilated mind, of every blasted soldier's body speaking from the very grave—of all the millions of tortured vic-

times of world-wide sadistic power so much more blind and insane than Hitler's own that there is no comparison. You are the victim, *every one of you*—and you cannot see for your "education."

It is a vast falsehood—that "education"—as Fort tries to prove, and *does very well* with it too. I do not say that two times two is not four (even "higher" mathematics). Like Fort, I say it is *not so* when applied to upholding the ancient errors and hideous toadstools that profusely decorate all our thinking and writing everywhere. Astronomy, the particular hutt of Fort's bludgeon of fact-exposure, is only one mule of a sample of what you "educated," blinded victims believe to be true of your world.

**IT IS NOT SO!** It is not as you see it. It is not as you have been taught to believe at all. It is a great hoohy, our surface life, fed upon by crawling hideosities which managed to eat out the eyes first, and the face is far gone.

We have no face, and we do not know it any more, for the mind is full of holes. There are holes in every once-intelligent head, put there with rays that *do* exist—and are fought against (admitting their existence) by the very men most riddled with mind mutilation!

That an Elder race built those rays is not a fancy hoax. It is a simple and terrible fact to learn—to accept because it is evidently true, not to deride, but to admire forever—and those rays are in the hands of the hideosities that feed upon us, and are waited upon by the sons and daughters of our best—who have "*not*" disappeared into slavery forever only because our society is an enslaved fabricator of delusions of safety all about you (who may be the next).

Waited upon hand and foot by our best—and it is *not true!* But you see, it is *true*, and the "statistics" are a fabrication by people who do not themselves even know it is a fabrication. No policeman hut does not know *something* of the "boogie men" and that it is worth his life to open his mouth about it. "NO policeman" is too great a number. I mean to say: "No policeman who is in a place where he examines such things as missing persons statistics"—no policeman used to taking orders and never thinking for himself.

Yes, there are some policemen who do *not* know. Yet "if you all knew" is the only phrase that fits. But how to tell you when you accept every sham truth handed you. When you accept the popular concept of your own government as supreme upon the earth—and no other to contest her but Russia. That, too, is a comforting falsehood. We are fed upon more than others, for we have clever hands and many trades.

The hoogy man is the power behind nearly all our industry (well what is the use of trying to expose a fabric as big and as shoddy as that?). BUT, you buy so very many yards of that shoddy, each of you every day, that you *must* occasionally detect a *slight* odor about it.

How to tell you that the trade of dressing up shoddy to look like perfection for your blind eyes

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How to tell a blind man that he has not eyes, when he has been assured he *has* the best eyes in the world by the *very best* optometrist?

A BLIND man who is sure he sees much better than his informant! A blind man who "knows" all about the world, and Marco Polo himself didn't know more about China than this blind man of our Universities. No one could know more than this learned blind man. In fact, there never *was* a better educated man. He knows all—without even looking up from a book.

How to show a blind man the comic page that contains his image? First he must see himself, and how can he? He knows he is perfect—and eyes have never existed.

Yet we should not mention "policemen," the men who spend so *very* much time chasing down such rumors as flying saucers, only to be assured they *do not* exist.

Who are the gentlemen who are so solicitous in assuring them "it is not so"?

They are our worst, and they always put letters after their names indicating "authority." I wonder if they *were ever in a school*, if they are not the "educated" of the caverns, shamming, for they never bothered opening a book and getting a degree—not when there are minds to read for the looking.

They are the men who look at writing like this, and say: "He has been persecuted by a policeman when he was young, and has retained a delusional fear of all policemen." You know how learnedly they say these things. I cannot put the phrases into the wise artistry of sham with which they invest their webs of wool.

"Webs of wool"—how to extract from polluted minds? Can you tell me?

No, you whose missing sister is slavey in an underworld brothel—you cannot tell me. Your sister is *not* missing, you "*know*" she is dead. She died in so-and-so of such-and-such and it was official. She was drowned, she was never found, she got in a cab and was never seen again, or she took a job in so-and-so and quit writing letters.

My own brother was killed with a ray, and I am to think it was not there, that it was a delusion. My *stir* ray was most effective, and I have no children. Yet I am to think that is a coincident illusion, that years ago when I "dreamed" I was *stir'd* is causing my sterility by delusional derangement of sexual function? On and on, the web of wool winds, if anyone traces it. In every mind, you find a trace of it; and

in so many, vast balls of winding lies!

My thousands of clippings, my files of thousands of letters from people suffering from continual ray-persecutions and torments; these are also "delusions," "mass hysteria," "self-hypnosis" from reading my stories. It is so *very* easy to make up a phrase for a blind man to accept!

Flying saucers are also "mass hysteria."

Blind people do not know that "they" are there in reality. But *most* of you belong to the kingdom of the blind! The one-eyed man is not a king there, strangely enough. He is a "victim of delusions." He *thinks* he sees things preying on the blind people. Preying stealthily and taking advantage of their blindness by lying to them while they steal all they own, including the very blood out of their blood banks.

Do you personally know where the money goes? How then do you know we don't support a vast hierarchy, a pluto-aristocracy of Hellodom?

"It is impossible, because it is *fantastic*."

That is the reaction, as standard as oil!

And it is oil! Life is a *horror* and a *fantasy*, to which your eyes are closed by your parasites! You cannot accept it because it is ugly, and you have been *taught* not to look!

A parasite is ugly, and it has its bag of tricks to keep it concealed. Study the bedbug that hides in the dark—so very quickly that the light seldom catches him. Study the bedbug of the darkness, its transparent body, so red with blood when it has eaten.

You see the *type* of the creature of the darkness that preys upon you. Turn on the light and get on your knees and look *down*.

But you *can* find a bedbug a lot easier than you can find man's *worst* parasite.

Nevertheless when you shift luxurious pillows in luxurious places you will find them swarming right and left to get into the darkness again!

BUT did you ever look and listen in the dens of luxury? Did you ever *see* such a den? Did you ever enter where only the sybarite of much wealth and expensive tastes crawls to lust? Can you say you have *looked* for bedbugs?

Did you ever *know* a stinker? Did you ever *see* a parasite to know it? Answer honestly No!

It would be very wise—very, very wise—to look under the bed (rock). "But is it not too difficult?" "Would I not have to push myself forward where I was not wanted?" "Would it be *safe*?"

Brother, it is *not safe* *not to*!

Not when your own head is full of holes plugged there by those same parasites to keep themselves hid from you. Plugged from a distance with a ray invisible to you, in your sleep, when the slight pain of nerve cutting is unnoticed. Absent-minded professors—and absent-minded administrators of our state—are no new phenomenon! But they are no more pretty to *one who knows* what ails them than are the bedbug bites that ring slum children's necks.

And they are vastly more dangerous to our national health than the slum children's ill health. They are a worse-natured and more tricky parasite than a bedbug, those we speak of. They are an ancient custom of our life, and *their traces are everywhere*. But not for the timid-minded idiot who "knows" they are not there when their effects are pointed out.

*Their dung litters our thoughtways in all directions!* Their bites are in every mind! Their debilitating, terrible effect upon our health is seen in every phase of our wrecked economy. Do you *really* think all those billions of war debt went to the purpose assigned? Do you *really* think you pay *honest* prices? Taxes?

So it sounds overdone, this "hoax"? It is too terrible to be true, anything affecting us so seriously would surely come to the light of publicity. It cannot be, we are *not* preyed upon by a destructive parasite unseen and unheard of, unimaginable in its vicious ferocity and its unnatural nature.

So it is impossible? To you, I suppose it is. You are blind, and the blind cannot see.

Did you ever hear a householder-host insist to a guest, a roomer, a rent-payer, that there were *no* bedbugs when the neck was visibly covered with their bites? Insist that the bites were a rash—or pimples, or anything but the disgusting truth?

That is exactly what these explainers and liars who delude you are doing! Precisely! The parallel is astonishingly exact!

Suppose I admit there are no "bedbugs" under earth's bed of rock? That there are only grave-worms there, waiting for *you*? That there is nothing pushing you hastily into that grave? That I have lied, and that it is false, and it was insane of me to mention it to you? You have no parasites, and if you do they are the *very nicest parasites* imaginable?

I thought it would be interesting to risk my neck to tell you about your obnoxious parasites and advise you as to a specific for their removal. I beg your pardon. It is not.

Please give me a pair of the dark glasses, of the opaque kind. That's right, the kind everyone is wearing. The "smart" kind, please! That's right, the opaque type.

Now I am one of you, and there are no voices, no caverns, no parasites who slaughter you for fun, enslave you for their work, and beat you for their amusement. I am no longer insane. "They" do not exist!

But you see, there is a circus, just as in ancient Rome, quite a few of them. Your brothers are cleaning up the blood from the last performance. . . .

And you say there are *no* mysterious disappearances! Well, you are right! It is all *very* efficiently disguised!

"Missing in action" provided for a hundred thousand slaves. "Address unknown" provided for maids, for brothel inmates, for . . . never mind, you cannot believe what you do not see.

I thought you might be able to help some of

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those who are lost into a sea of pain and misery. But I see you are also helpless. I beg your pardon, and for a time I retire. Undefeated? I wonder.

I put on my glasses. I am one of you. These things do not matter, they only come out from under when the lights are out—and their bites are not painful. You do not have parasites. I will see you in the grave—if you believe, and have faith, and are good. . . .

But—if only you knew. If only we get a chance!

## EMPTINESS!

IF A person examines civilization especially certain technological aspects, he soon discovers that there are certain trends and techniques, independent of actual inventions, which seem to have influenced progress to a greater degree than others. For example, mass production is one; the mechanization of the coal mines is another; the heat treatment of metals is still another. In themselves these things are not inventions but rather methods stemming from inventions, all which tend to accelerate industrial progress.

The Twentieth Century is "the age of electricity" or the age of "electronics" it has often been said. Unquestionably this is true. The application of the vacuum tube to technology has most radically and will in the future most radically, change the face of the world. There is one very important word in the preceding sentence—"vacuum." That is to electronics what mass production is to industry as a whole—the development of the art of producing, that is.

It is a familiar fact that Otto von Guericke, mayor or Magdeburg invented the first vacuum pump during the sixteenth century. His machine was no more than an inverted force pump with leather valves which made it capable of drawing most of the air from a container. Basically, vacuum pumps remained the same for many hundreds of years until the need for highly improved ones arose. This was in the nineteenth century when men were on the frontiers of great discovery. And for the most part their researches required that they work where there was no air. From a crude mechanical gadget the vacuum pump became a highly refined instrument.

The invention of the electric light bulb, the neon tube, the radio tube, the x-ray tube, and every other thing that had to do with those mysterious particles "electrons" stimulated the improvement of this machine.

In devices employing electrons, like the radio tube, the cathode ray oscilloscope, the x-ray tube etc., it is necessary to control streams of electrons. This cannot be done in air because it simply acts like a perfect barrier to the stream. The electron stream must be surrounded by—nothing. Or nearly nothing. It is now possible to "pull," with a high grade set of vacuum pumps, 99,999,999 molecules out of every 100,000,000 molecules in a glass vessel. Even at that many, many millions of



molecules remain, but not enough to interfere with the streams of electrons.

How is this done? A stream of oil vapor or mercury vapor is blown past an orifice connected to the container to be exhausted. The air in the container diffuses into the vapor stream, which carries it away. The oil or mercury vapor is condensed and the cycle repeats itself until the maximum amount of air is gone. This can be done in a surprisingly short time. In less than an hour in fact. In ordinary radio tubes where the requirements are not as rigid as those in more specialized and demanding devices the time taken is even less.

It is also possible to obtain a vacuum or an additionally greater effect in one already formed, by sweeping the last molecules of air out with what is known as a "getter." A "getter" is a chemical substance, like barium or magnesium which has the property of combining with the substance (air) to be removed from the vessel. In spite of these techniques it is still not possible to create as good a vacuum as exists in outer space.

The advance of electronics and its consequent effect on our lives is almost a direct function of the ability to produce high vacuum quickly, thoroughly and cheaply. It was not always so. Even as recently as nineteen twenty-five, when radio started with a bang, radio tubes were extremely expensive because high vacuums were so difficult to produce. With the advent of electronics into safety devices and into war-making devices, more and more our lives are being entrusted to the ability of men to make better and better "nothingness."

Someday it may be possible to make a vacuum by going out into space, opening the vessel to be emptied to the outside of the rocket-ship, sealing it, and returning with a "captured bit of emptiness."

#### WHAT IS MATHEMATICS?—

**R**OUGHLY paraphrased, the words of Bertrand Russell, the distinguished British mathematician and philosopher, "Mathematics is the science in which we don't know what we're talking about, nor what we're doing," is an excellent general definition of the subject.

Ever since earliest times when men began to make inquiries into the meaning of the nature of manipulating with numbers, they have endeavored to correlate the actual world—experience—and mathematics. What possible connection is there between those little symbols we so gallantly play with, and the temperature of a room or its size?

The answer to this has never been completely given, but present-day mathematicians can certainly make an excellent stab at giving it. It is not necessary to be a genius to realize the importance of mathematical symbolism and its relative manipulations. It is apparent to everyone in business, in industry and commerce, that without the knowledge that we do have, it would not be possible to have an organized civilization. But what is beyond this? What is behind this?

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Mathematics, as practiced today, is conceded by one school of thought to be nothing, more or less, than a game, a game identical in every aspect to, say—chess or checkers. In fact, the comparison is closer than we realize.

It is possible in a mathematical subject known as "symbolic logic" to break down a mathematical system into its elementary laws and from these elements reduce the system. But further than this, it is possible to take the elements—any elements—and from them create a complete mathematical system in itself.

Algebra or geometry, for example, reduce to a series of simple fundamentals, called "postulates." Within in a narrow framework of assigned and consistent rules of manipulation, this algebra or geometry is no more than a game. This is a very fortunate thing, however.

It so happens that the conventional algebra and geometry we have been talking about do not only behave consistently within themselves, but also correspond to the external world.

Thus, in algebra, the basic commutative law "(a plus b) equals (b plus a)" is not merely a postulate. It corresponds to actual experience. It doesn't make any difference when adding beer barrels whether I add six to eight or eight to six. It comes out the same in the end.

"But" someone will ask, "what if that law was not true?" Fine! We'll say that it is not true and then proceed to construct our game of algebra on that basis. What happens? As long as we're consistent, nothing happens. We just go ahead and keep our new algebraic system, worrying about nothing. This is actually what mathematicians did.

THERE was nothing in actual experience to correspond with that new algebraic system. So what. It worked within itself and it was "good." But then physicists suddenly came along and found need for precisely the facts uncovered by such "unnatural" mathematics. For their specific purposes, it worked perfectly. In fact, in atomic physics and in the study of spectral lines among other things, it was a perfect description of what it should be. So an apparently useless "game" became of intense practical value.

An even better example of this is non-Euclidean geometry. When the parallel postulate was rejected and a new system of geometry created, it was at once clear that it had application to the world of reality—oh yeah! Einstein, with the mathematics supplied him by Lobatchewsky, Riemann, Gauss and others who were merely playing around—among them, Levi-Civita—found that non-Euclidean geometry was actually the true description of the world—not Euclidean!

And so it goes. All throughout mathematics, systems have been set up and are available to describe every conceivable sort of thing. Someday they may be used—someday they may turn into practical tools. Meanwhile they wait, ready for the application of their principles.

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